Data Solutions SIF Agent for PowerSchool™ Premier

User's Guide

Version 2.5

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Part I

OVERVIEW AND INSTALLATION

1. Overview of the Data Solutions SIF Agent for PowerSchool

Features

- SIF 2.x Compliant. SIF 2.0r1 Certified. Supports all versions of SIF 1.0r1 and later.
- Works in SIF environments where multiple versions of the Schools Interoperability Framework are in use. The Agent automatically adjusts the way it performs depending on the version of messages received from the Zone.
- Scalable. Supports multiple zones for centralized deployment. The Agent can connect to as many zones as necessary from a single server, limited only by available memory, processor speed, and network bandwidth.
- Configurable. Numerous configuration options, including the mapping between PowerSchool fields and SIF Data Object fields, can be customized to meet the specific needs of your district. Most aspects of the Agent can be configured on a zone-by-zone and SIF version-by-version basis to accommodate the unique integration requirements of each SIF Zone.
- Reliable. The Agent can be installed as a Windows Service for uninterrupted operation on Windows platforms. In addition, it will automatically recover when the connection to the Zone Integration Server or PowerSchool database is broken.

Requirements

- PowerSchool 6.2.1.2 or later
- Microsoft Windows, or Mac OS/X
- Java 1.5

Note: See **Java Requirements** in the **Installation** section

How It Works

The Data Solutions (formerly Edustructures) SIF Agent for PowerSchool is a middleware component that enables real-time data exchange between the PowerSchool student management system and applications that support the Schools Interoperability Framework. The Agent communicates with the SIFWorks® Zone Integration Server (ZIS), the central messaging hub in the SIF architecture, to report changes in PowerSchool records and to respond to requests for information from SIF-enabled applications.

SIF Zones

The PowerSchool Agent supports both school-based and district-based zones. A zone is a logical grouping of data objects and administrative applications that can share objects with one another. The PowerSchool Agent supports multiple zones, which means it can connect to more than one zone at a time much like an e-mail program can send and receive messages from more than one e-mail server.

In addition, the Agent supports the concept of "aggregate zones." Aggregate zones let you combine one or more zones into a single zone for scalable zone management.

SIF Request & Response

When applications request data from PowerSchool through the SIF infrastructure, the Agent queries the PowerSchool database for records, converts the results to one or more SIF Data Objects, and then returns the results to the Zone Integration Server. The server securely and reliably forwards the responses to each of the requesting applications. You can prevent certain applications from requesting specific types of data by using the Access Control features of the Zone Integration Server.

☞ **NOTE**: Refer to the Data Solutions SIF Agent for PowerSchool Mappings Guide for a detailed description of the SIF Data objects and elements that are provided by the Agent.

SIF Event Reporting

When changes are made to a record in PowerSchool, details of the change are recorded in the database. The Agent periodically reads from this database to report changes to the Zone Integration Server (ZIS). When a SIF Event is reported, it is sent to the zone associated with the data. Event reporting occurs every 60 seconds by default. You can increase or decrease this frequency, or turn off Event Reporting altogether, from the Agent's Settings dialog box.

SIF Subscription

The Data Solutions SIF Agent for PowerSchool version 2.0 and later supports subscription to StudentPersonal and StaffPersonal change events. This subscription allows PowerSchool to receive SIF Event information.

How Do I Run the Agent?

The Data Solutions SIF Agent for PowerSchool is designed for unattended operation. It is installed as a Windows Service on all Windows platforms. As a service, the Agent runs whenever the server is running, regardless of whether or not a user has logged in to that computer. You can stop, start, or restart the service from the Windows Services Manager.

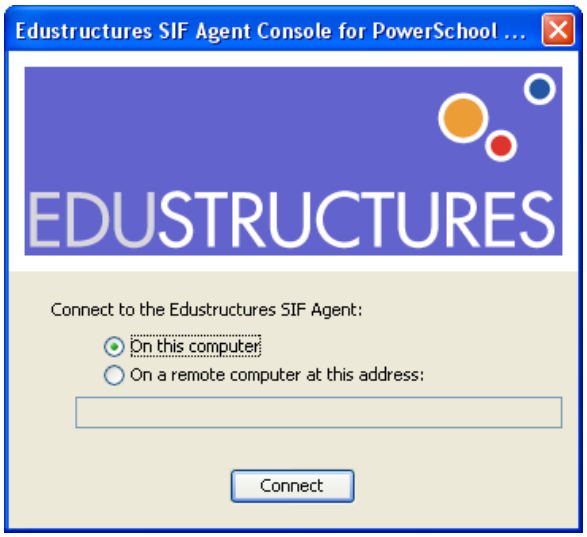
The Agent can also be run as a "standalone" application by choosing the "PowerSchool Agent - Run Standalone" command from the Data Solutions program group on the Windows **Start** Menu, or by running the PowerSchoolSIFAgent.exe file from the Agent's directory.

☞ **NOTE**: Only one instance of the Agent can be running on a given computer. If you start the Agent as a standalone application and it is already running as a Windows Service, the Agent will prevent itself from running a second time.

How do I Configure and Manage the Agent?

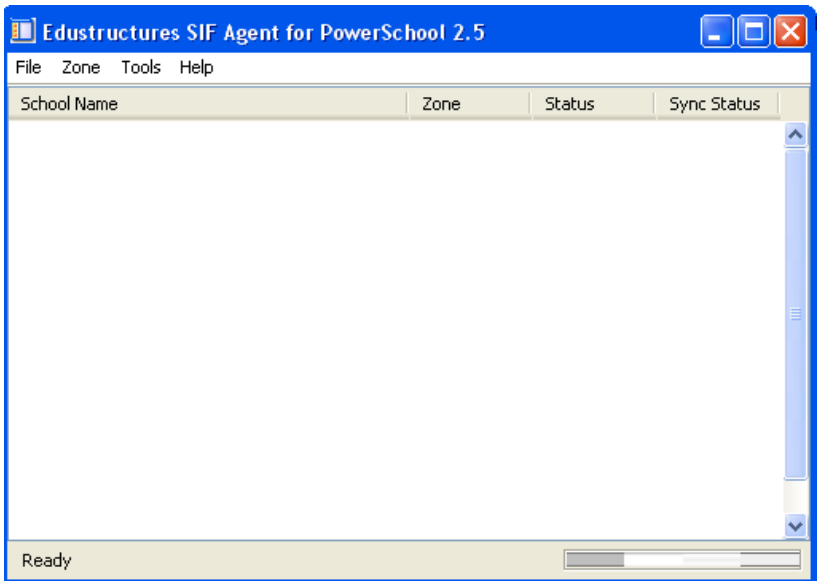
The Agent features a graphical console from which configuration and management tasks are performed. To display the console window, click the icon on the taskbar near the system clock:

System Tray Icon



Data Solutions SIF Agent for PowerSchool Console Connect

Data Solutions SIF Agent for PowerSchool Console



2. Requirements

PowerSchool Application Version

PowerSchool 6.2.1.2 or later is required.

Java Requirements

When the Agent and the Application Are Installed on the *Same* Server

The Agent installer requires Java version 1.5 or later; however, if the Agent and PowerSchool (the application) are to reside on the **same** server, **do not install or run** on that server any version(s) of Java later than 1.5.0.13-16. Installing or running an incompatible version of Java on a server shared by the Agent and the application could result in adverse behavior from the Agent or the application or both.

When the Agent and the Application Are Installed on *Separate* Servers

If the Agent and the PowerSchool application are to reside on **separate** servers, adhere to the following when installing the Agent:

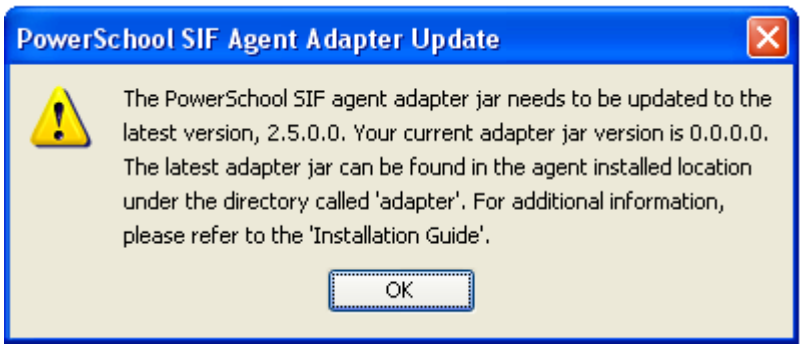
The Agent installer requires Java 2 Runtime Environment (JRE) version 1.5 or later. To determine if Java is already installed on your system, open a command prompt and issue this command:

```
java –version
```

If you receive a message that "java" is not recognized as an internal or external command, the Java 2 Runtime Environment is not installed. Visit the Sun Microsystems website at http://java.sun.com to download the latest **compatible** version.

Current Adapter Version

To run the PowerSchool SIF agent, you will need to install the latest version of the SIF Agent adapter jar. (The latest adapter jar can be found in a directory called "adapter", in the location where you installed the agent.) When you open and run the agent, if your adapter version needs to be updated, you will see this popup warning:



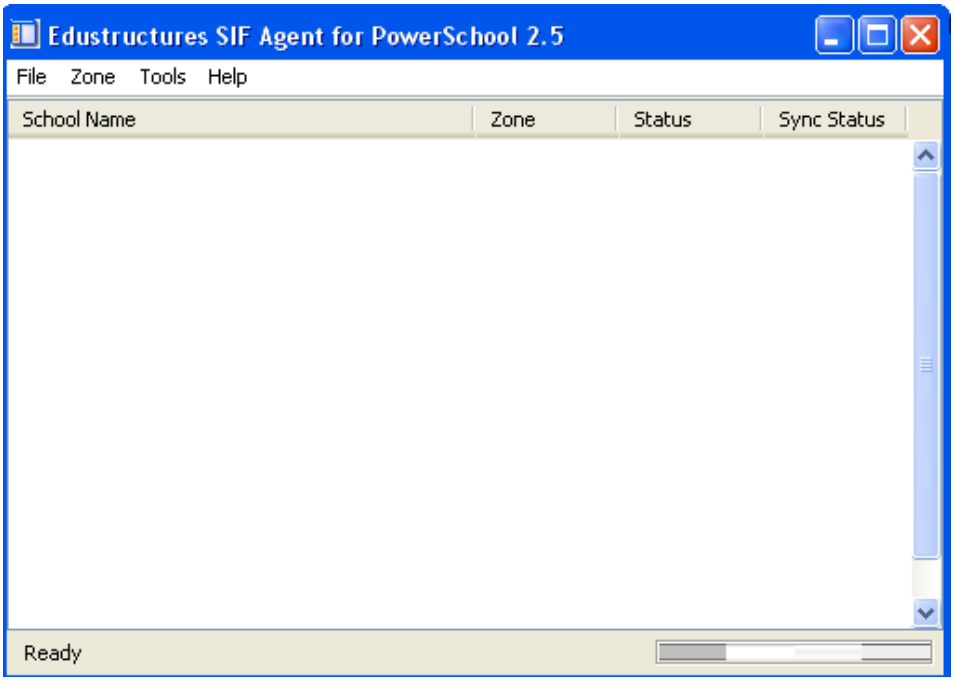
Consult the SIF Agent for PowerSchool Installation Guide for information about installing the latest adapter jar.

Part II

3. The Console

Starting the Console

The Data Solutions SIF Agent for PowerSchool console is where configuration and administration tasks are performed. To open the console, click on the Data Solutions SIF Agent for PowerSchool icon in the system tray.



NOTE: To remove the icon from the system tray, right-click on the icon, and select "Exit Console."

At Startup: New Year Rollover Reminder

A new feature of the Data Solutions SIF Agent for PowerSchool is the New Year Rollover reminder. Depending on school year settings configured in the Agent, the New Year Rollover wizard will display this reminder at start-up:

You can choose to start the rollover process here by selecting "Yes" or defer it for a later time by clicking "No." Check the box "Don't prompt me about this again" if you don't want to receive this reminder again.

For instructions on running the New Year Rollover Wizard, please consult *Part V: New Year Rollover* in this guide.

Zone Condition and Status

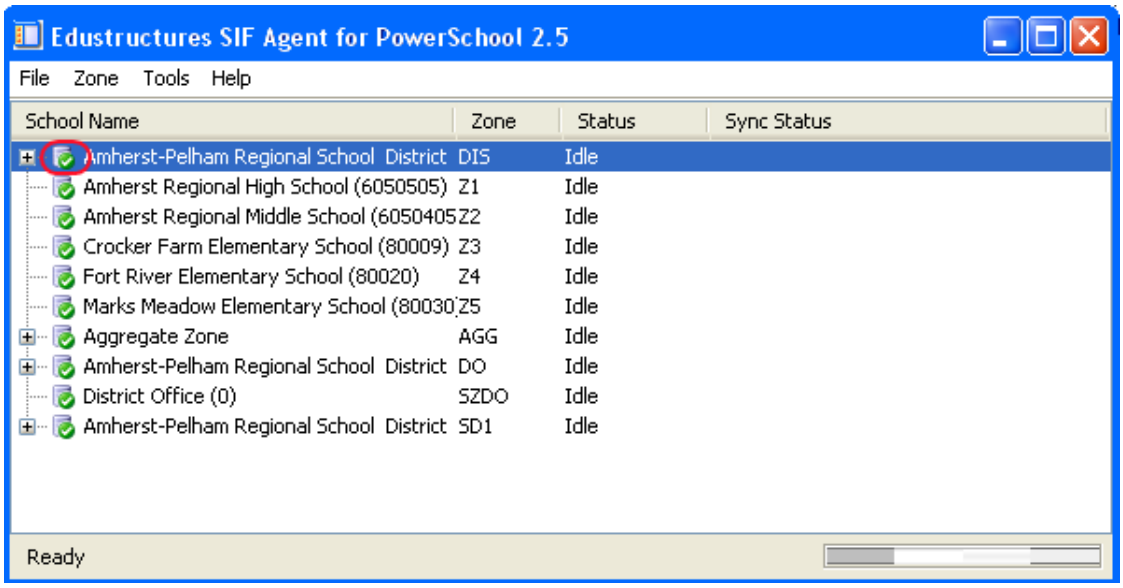
Although the Data Solutions SIF Agent for PowerSchool is designed to run unattended, the Console can provide a snapshot of the activity on each zone and alert you to errors that may require attention. In the Console's main window, general status information is provided through a condition icon (displayed with the district, school, or zone name) and a status message (displayed in the Status column).

Zone Condition Icons

One of four status icons may be displayed beside a zone name in the main window of the Agent console:

Icon	Condition	Description
	OK	The zone is **connected** to both the PowerSchool database and the Zone Integration Server (ZIS) and is idle or active. No attention is required.
	Warning	A **warning condition** has arisen that may require attention
	Error	An **error condition** has arisen that requires attention. The PowerSchool database is not available.
	Disabled	The zone is disconnected from the database or the Zone Integration Server (ZIS)

In the following screen capture, the icon indicates that the zone is connected to the database and the ZIS.

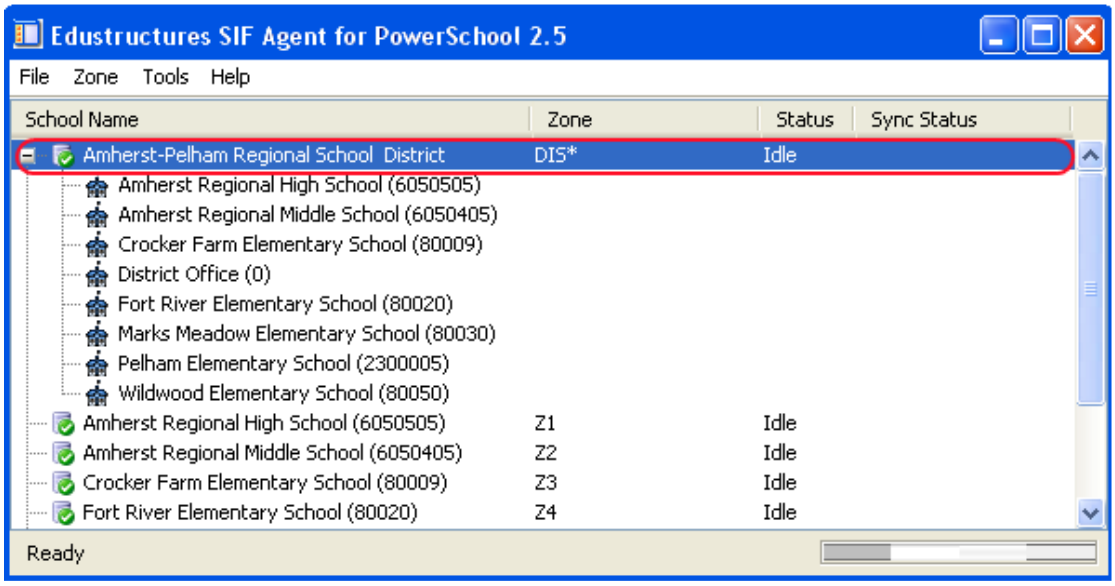


Status Column Messages

In the Status column of the main console, a message about zone connectivity is displayed.

Status Column Message	Description
Idle	The zone is connected to the Zone Integration Server (ZIS), but not processing messages at the moment.
Initializing	The zone is in the process of connecting.
Disabled	The zone has been manually disabled, or the zone has been temporarily disabled by some process, such as New Year Rollover.
Disconnected	The zone is disconnected from the Zone Integration Server.
Database unavailable	The database connection is not available.
Agent Sleeping	Indicates that the Zone > Control > Sleep command has been executed. "Sleep" mode informs the Zone Integration Server that the Agent is not accepting messages for the selected zone.
*	An asterisk beside any status message indicates that the zone is running in **Pull mode.**

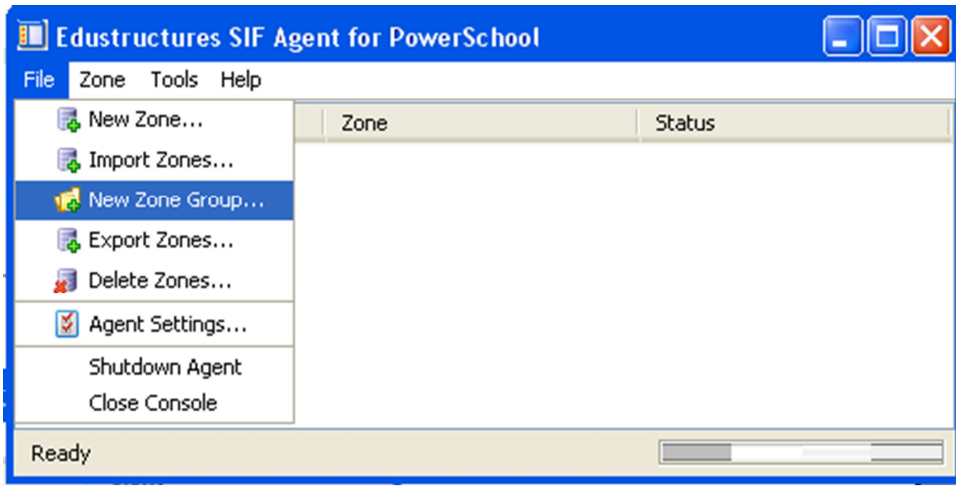
In the following screen capture, the condition icon and status message indicate that the highlighted zone is connected, idle, and running in Pull mode.



The Main menu

The Console's commands are organized under three menus on the main menu:

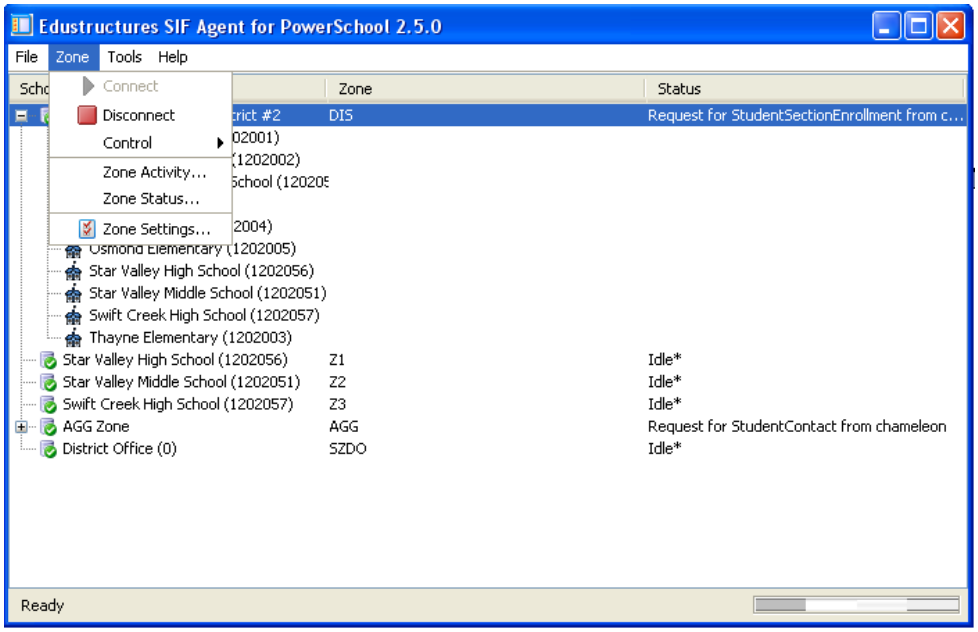
File Menu



From the File menu, you can manage Zones; shut down the Agent, and close the Console.

File Menu Item	Description
New Zone	Displays fields for establishing a New Zone
Import Zones	Displays list of Zones eligible for importing from the import file.
New Zone Group	Displays a field for entering a Zone Group ID.
Export Zones	Displays list of zones eligible for export from the export file.
Delete Zones	Displays "Delete" commands; this operation cannot be undone.
Agent Settings	Displays Agent connectivity and reporting settings, as well as default Zone settings.
Shutdown Agent	Closes the Console, but leaves it running in the system tray.
Close Console	Closes the Console, but does not shut down the Agent.

Zone Menu



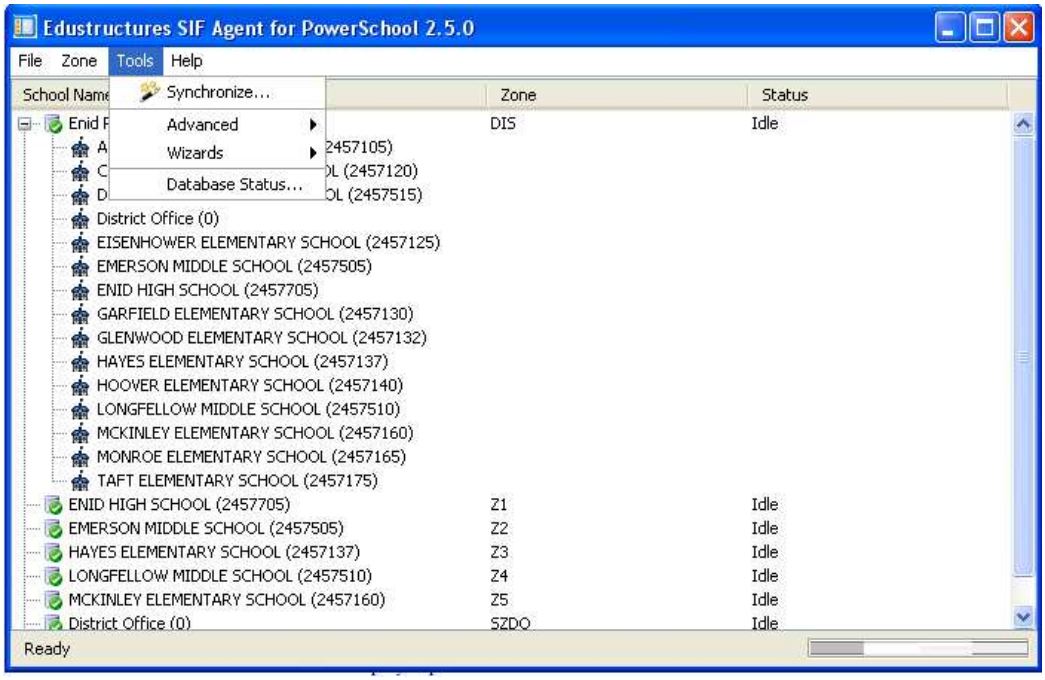
The **Zone** menu is used to manage connections to SIF Zones or to display the Zone Settings window for the highlighted zone. Note that Zones cannot be added and removed using this menu; instead, use the File menu.

Zones Menu Item	Description
Connect	Establishes a connection to the zone that's highlighted in the main window. This command is grayed out if the highlighted zone is currently connected.
Disconnect	Disconnects the Agent from the Zone Integration Server that manages the zone that's highlighted in the main window.
Control > Sleep	Informs the Zone Integration Server that the Agent is not accepting messages. This command is grayed out if the Agent is currently sleeping. Note: the Agent normally places each zone in Sleep mode when the Windows Service is stopped.
Control > Wakeup	Wakes up a zone that has previously been put into Sleep mode. Note: The Agent normally wakes up each zone when the Windows Service is started.
Control > Ping	Sends a "SIF Ping" request to the Zone Integration Server for the highlighted zone to verify that the Agent and ZIS are connected.
Control > Unregister	Unregisters the Zone from SIF; the zone will automatically re-register when the Agent restarts or user selects "Connect."
Zone Activity	Opens the Zone Activity screen, showing activity and unreportable events for the selected zone.

Zones Menu Item	Description
Zone Status	Opens the Zone Status window, displaying information about the status of the selected zone. Information about the Zone, ZIS, Agents participating in the Zone, and any reported errors are displayed here.
Zone Settings / Zone Group Settings	Opens windows and dialogs where you can view or change individual or group zone settings, through sub-menus for School Year, SIF Registration, SIF Data Objects, Field Mappings, SIF Codes, and Student Data Filter.

Tools Menu

From the Tools menu, you can Synchronize the PowerSchool database with data from other applications, start the Event Queue Viewer, start the New Year Rollover Wizard, or check Database Status.

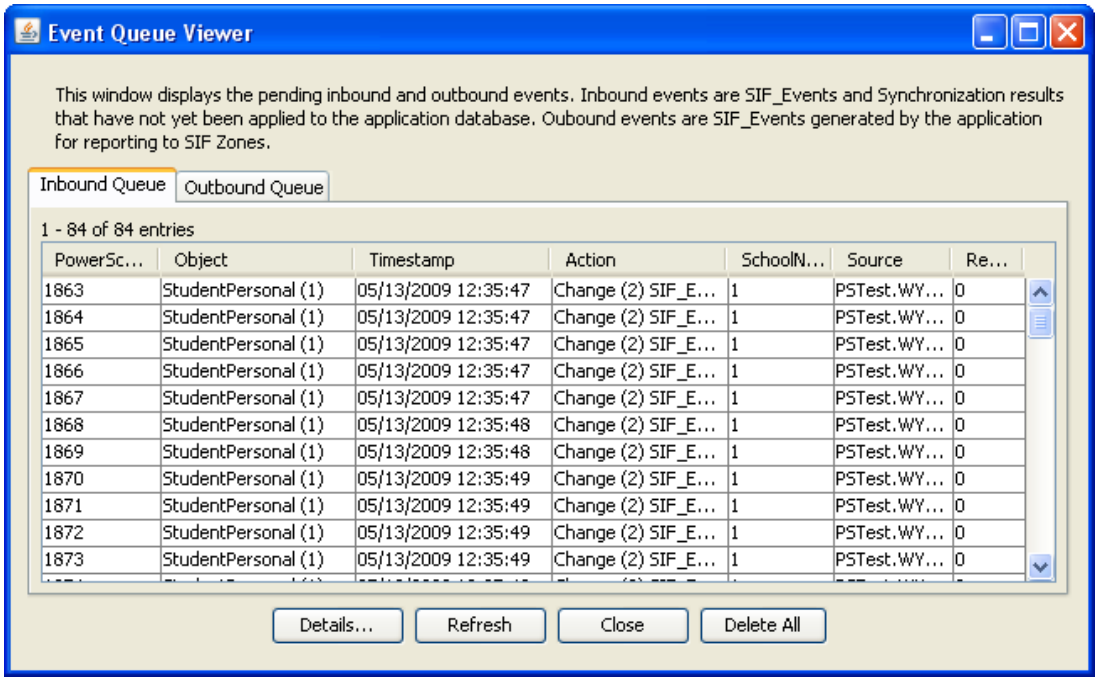


Tools Menu Item	Description
Synchronize	Updates the PowerSchool database with records from SIF Data Objects published by other applications.
Advanced > Event Queue Viewer	Displays a list of pending SIF events.
Wizards	Displays option to start the New Year Rollover Wizard.
Database Status	Shows database connection status, identifies Server, and reports number of RefIDs currently in SIF custody.

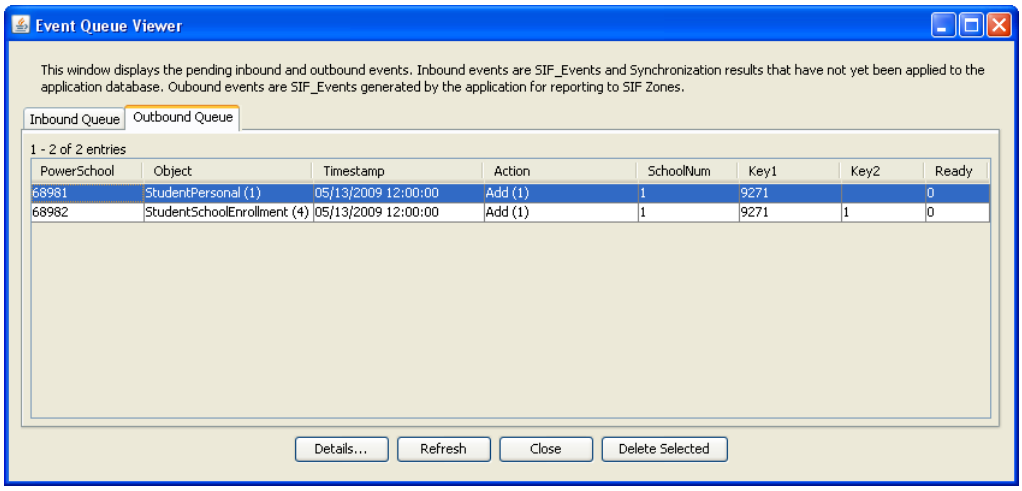
`Tools > Synchronize` launches synchronization wizard. (For detailed information about synchronization, please see "Synchronization", found in Part V of this document.)

`Tools > Advanced >` **Event Queue Viewer** displays pending events.

Inbound events are those that have not yet been applied to the application database.



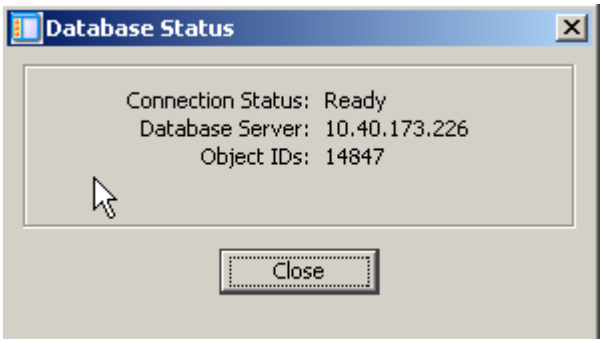
Outbound events are those generated by the application for reporting to SIF Zones.



Note: The Event Queue Viewer has new functionality; the **Refresh button** updates the page with current information, and the **Delete** button removes selected events from the table.

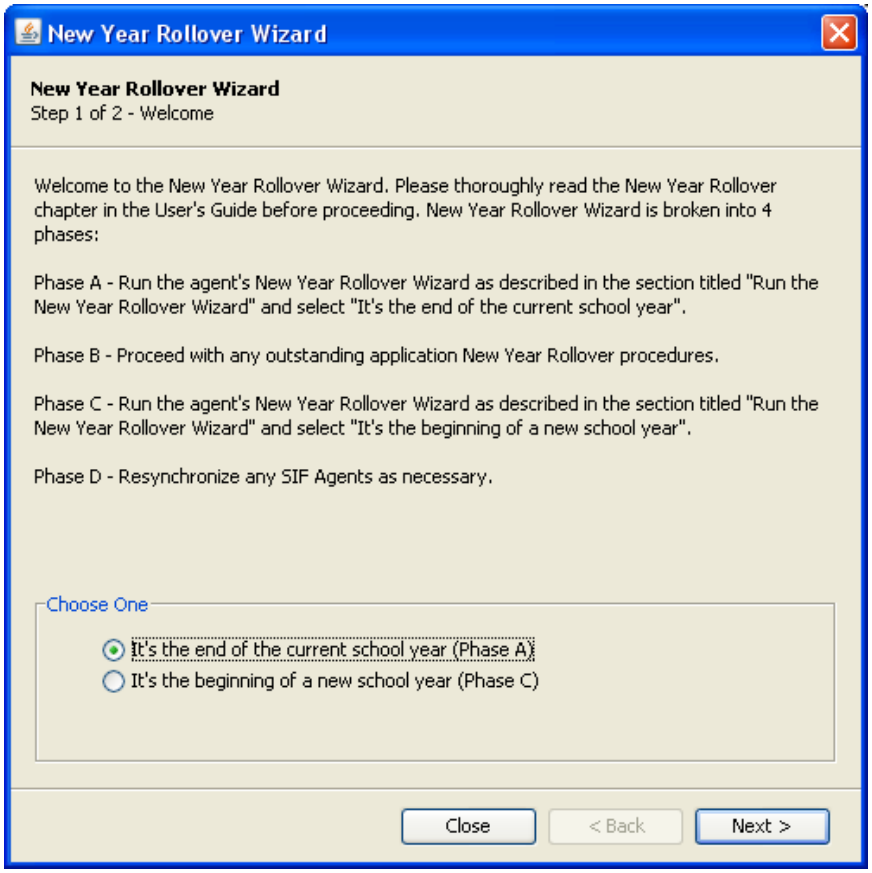
Tools > Database Status

This menu item displays connection status, identifies the database server, and object IDs.



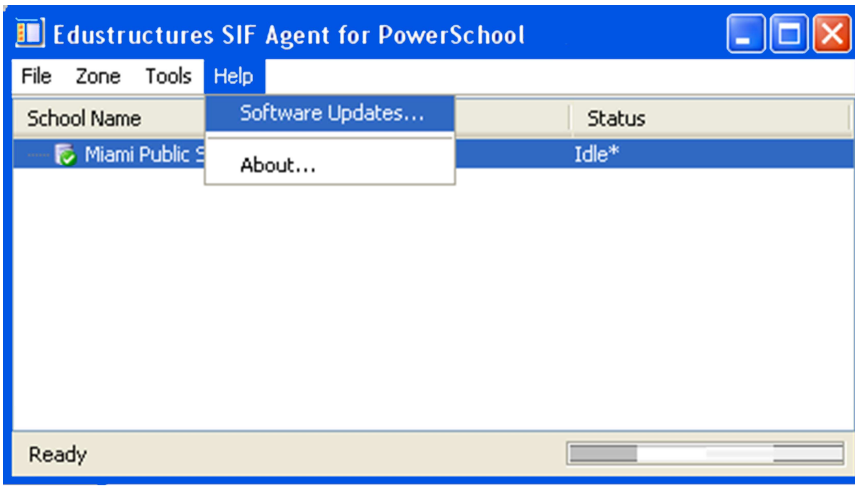
Tools > Wizards

The New Year Rollover Wizard is accessible from this menu. The New Year Rollover Wizard assists in procedures to configure the Student Information System and its supporting SIF Agent to publish data for the upcoming school year. Subscribing SIF Agents can then "resynchronize" with the new data set. (Steps for using the New Year Rollover Wizard are found in the New Year Rollover section of this guide.)



Help Menu

The Help Menu includes a Software Updates wizard, and an About screen that displays version and copyright information for the Data Solutions SIF Agent for PowerSchool.

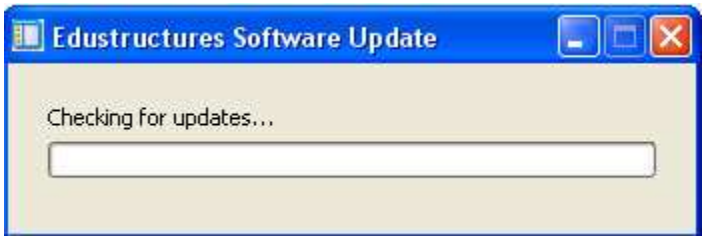


Software Updates

Before you begin the update process, note the version number of the Agent you are currently using.

To update the SIF Agent for PowerSchool using the automatic updater:

1. Start the SIF Agent for PowerSchool and log in.
2. Click on **Help** in the main menu toolbar.
3. Click on **Software Updates…**
4. The SIF Agent for PowerSchool will check with the Data Solutions update server for new versions of the agent.
5. A progress dialog opens, letting you know that the agent is checking for updates.



6. If a newer version of the PowerSchool Agent is available, a confirmation dialog will display.

7. Click "Yes" to download the latest version of the Agent. When the download is complete, you will be prompted to shutdown the application to complete the update.

8. To shut down the Agent, choose File > Shutdown Agent from the main menu.

9. Remove the Agent console from the system tray by right clicking on the icon, and selecting "Exit Console."

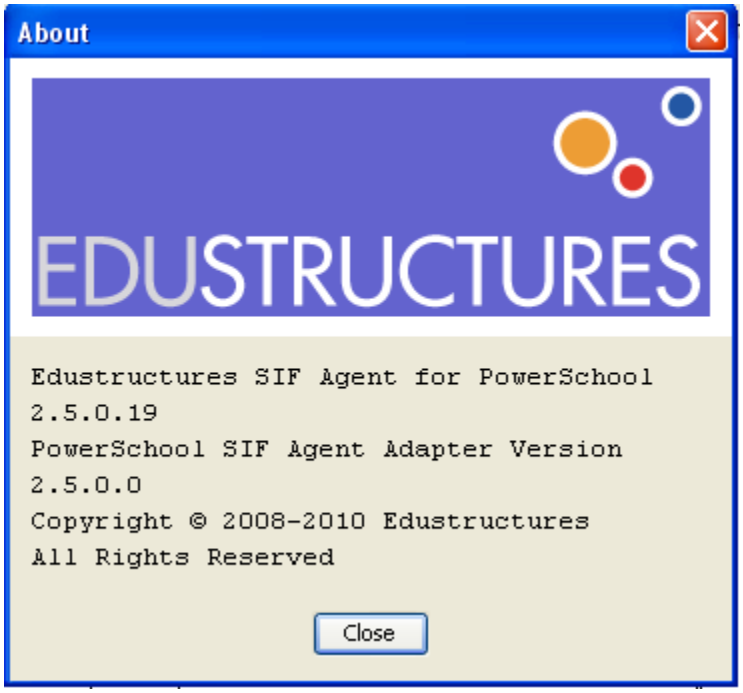
10. Restart the Agent service.

11. Launch the console and connect to the service. Verify that the update was successful by checking the version number located in the Help > About screen.

Note: If the agent finds no updates on the Data Solutions update server, a confirmation dialog will advise you so. Simply click "OK" to close the "No Updates Available" dialog.

`Help > About`

Choose Help > About to display SIF Agent and SIF Agent adapter version, and copyright information.



Part III

CONFIGURATION

4. Configuration Overview

Agent configuration is an important step in the deployment of SIF Zones. The Data Solutions SIF Agent for PowerSchool is highly customizable, designed to meet the needs of even the most demanding SIF integration project. Configuration choices made for the Agent depend to a large extent on the requirements and capabilities of other SIF Agents in use at the district. You may need to revisit the Agent's configuration when deploying new Agents that subscribe to the SIF Data Objects published by PowerSchool.

This chapter covers the basic configuration tasks that are mandatory for the successful operation of the Agent. Depending on the other SIF-enabled applications at the district, you may need to perform additional customization tasks.

Configuration of the PowerSchool Agent involves the following tasks.

- PowerSchool Configuration:
  - Select the Data Solutions SIF Agent for PowerSchool from the "Select Active Agent" page within the PowerSchool application.
- Zone Configuration:
  - Add each zone to the Agent.
  - Adjust global and zone-by-zone settings as needed.

5. Data Solutions SIF Agent Activation in PowerSchool

The SIF Agent relies on features of the PowerSchool application that support the Schools Interoperability Framework. The active SIF Agent must be specified in order to capture changes made to records in the database so they can be reported as SIF Events. SIF Events notify other applications of added, changed, and deleted records in real-time. By default, SIF Agent feature is disabled when PowerSchool is installed.

To turn on the SIF Agent in PowerSchool:

- Log into the PowerSchool application as an administrator.
- Navigate to **System > System Settings > Select Active SIF Agent**.
- Select Data Solutions **SIF Agent for PowerSchool**.
- Click **Submit** to save your changes.

6. Agent Configuration

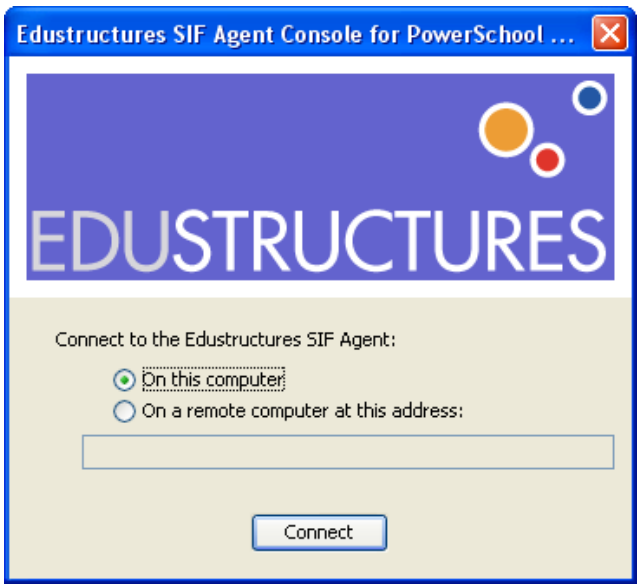
When the Data Solutions SIF Agent for PowerSchool has been activated in the application, configure the Agent settings.

All Agent and zone settings are configured from the Console's **Agent & Zone Settings** dialog box. To open this dialog box,

1. Start the Agent.

2. Click on the SIF Agent Console icon in the system tray.

3. The SIF Agent Console Connect is displayed.

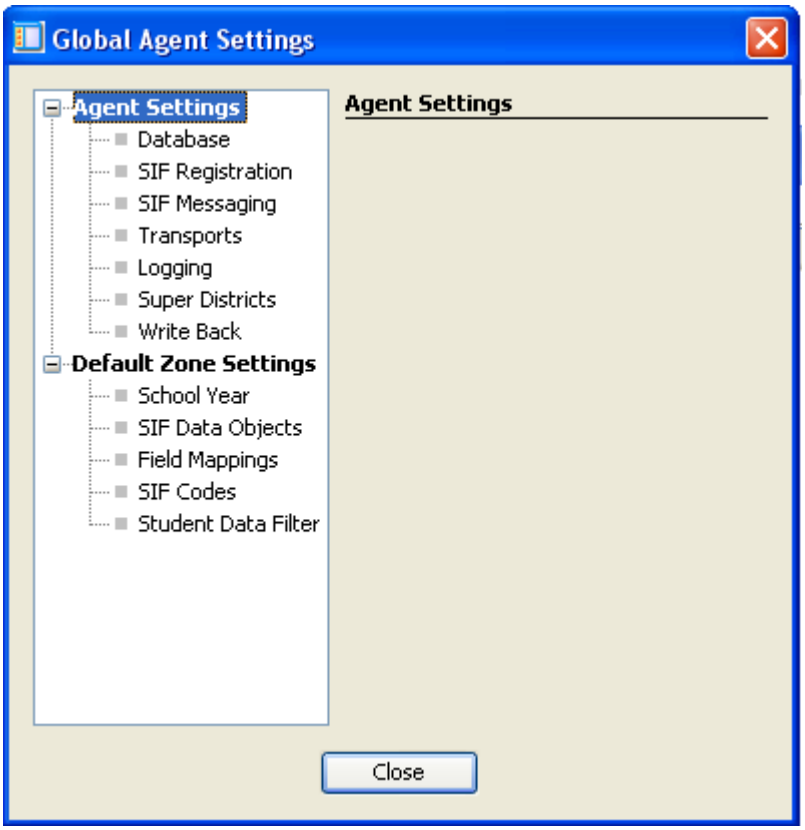


4. Click **Connect**.

5. The main window of the Agent Console is displayed.

6. From the main menu, choose **File >Agent Settings.**

7. The **Global Agent Settings** window is displayed.



8. Settings are arranged in a tree displayed on the left side of the Global Agent Settings window.

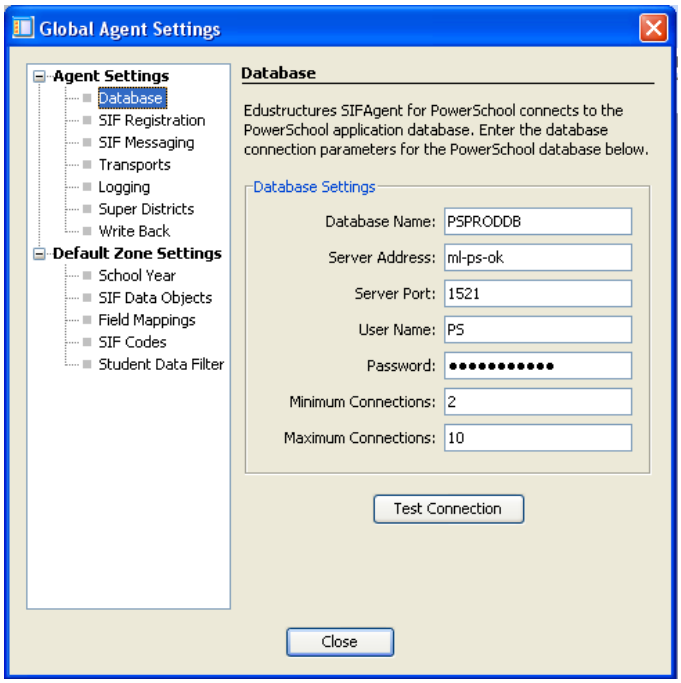
9. To view or edit a group of settings, click a node in the tree.

Database

To configure database settings:

1. Choose **File > Agent Settings**.

2. Click **Database**; the Database Settings window displays fields for entering connection parameters.



3. Enter database connection parameters for your PowerSchool Oracle database.

4. Test the Agent's connection to the database by clicking on the **Test Connection** button.

5. If the **Test Connection** returns a failure to connect to the database, verify connection parameters, ensuring that the Agent has access to the PowerSchool database server and that the database name, username, and password are correct.

SIF Registration

SIF Registration settings control how the Agent registers with zones managed by the SIFWorks® Zone Integration Server.

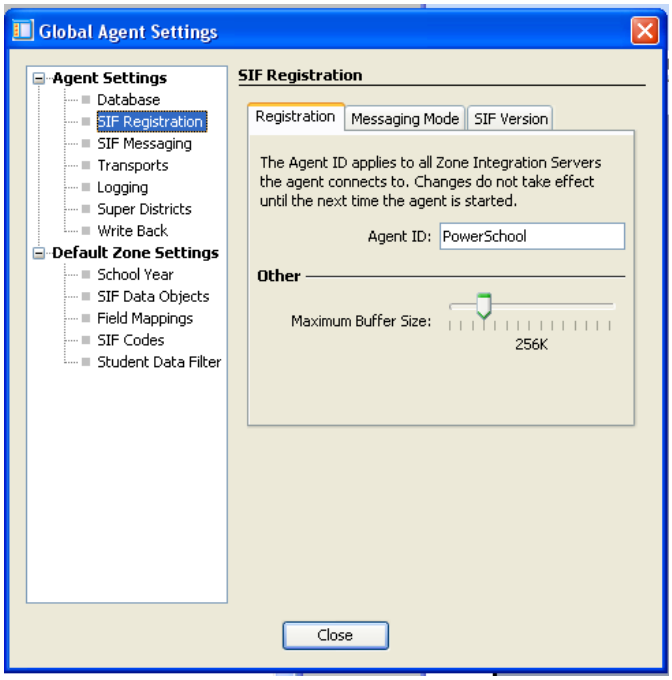
In order to send and receive messages from a SIF Zone, the Schools Interoperability Framework requires that each Agent "register" with the zone. During registration, the Agent sends a series of commands to the server informing it of various operational settings such as the name of the Agent, whether it will use Push or Pull mode to retrieve messages waiting in its queue, the maximum size of messages the Agent can receive, the SIF Data Objects that the Agent provides and subscribes to, and so on. Once registered, an Agent remains in this state until it sends the server a command to unregister or until manually unregistered by the ZIS administrator.

The PowerSchool Agent automatically performs the registration process at startup. If it cannot connect to a zone because of an error or because the Zone Integration Server (ZIS) is off-line, it will periodically retry until a connection is established.

SIF Registration > Registration Tab

To enter or verify SIF registration settings:

1. From the main menu of the Console, choose **File > Agent Settings**.
2. In the Agent Settings tree, click on **SIF Registration**.
3. The **SIF Registration** window is displayed.



4. There are three tabs in the SIF Registration window: Registration; Messaging Mode; and SIF Version.

5. Click on the Registration tab.

6. Enter the Agent ID. (This is how the Agent will be recognized by all the Zone Integration Servers with which it communicates.)

7. Select the buffer size. (This is the maximum size of the messages that can be received by the PowerSchool Agent.)

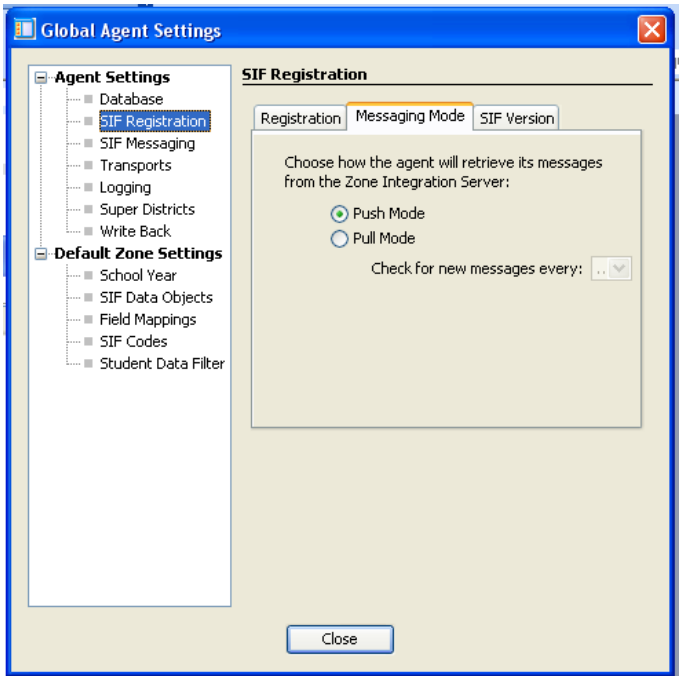
   Factory Default
   The factory default is 256,000 bytes.

   When to Change
   Administrators rarely change this setting.

SIF Registration > Messaging Mode

This setting determines whether the Agent will use Push or Pull mode to retrieve messages waiting in its queue on the Zone Integration Server (ZIS). Push mode is much more efficient than Pull mode, and indicates that the ZIS will send messages to the Agent as soon as they become available in the Agent's queue. This mode requires the ZIS to communicate with the Agent's IP address and port.

If a firewall sits between the Agent and the ZIS, or if the Agent is running on a non-routable IP address that cannot be contacted by the ZIS, Pull mode can be used. In Pull mode, the Agent must periodically send commands to the ZIS to check for new messages in its queue; however, Pull mode makes it possible for the Agent to exchange messages with the ZIS even if the server cannot "see" the Agent because of network or firewall configuration issues.



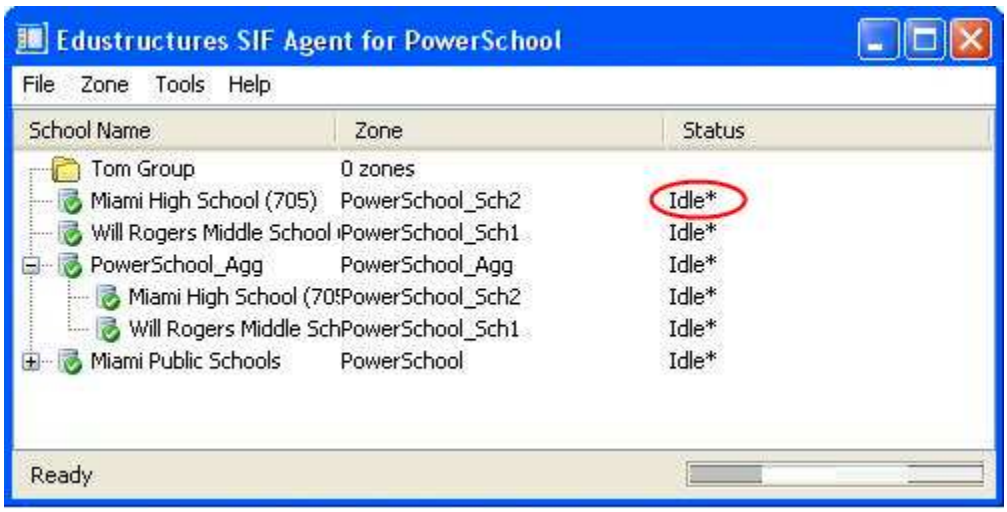
Default

The default is Push mode.

When to Change

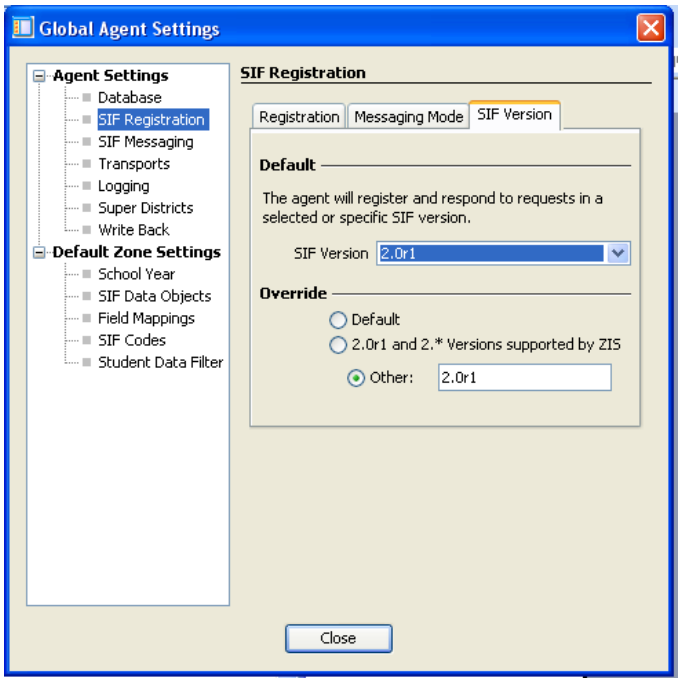
This setting is usually selected at installation time and not changed thereafter. Changing the messaging mode requires restarting the Agent. If one instance of the Agent is connected to many zones (e.g. over 25), Pull mode is not recommended because the Agent will spend much of its free time checking for new messages. If you are connecting a single instance of the Agent to many zones and must use Pull mode, make sure to expand the Pull Frequency to the 5-15 minute range. This will give the Agent ample time to send its Pull requests to each zone before repeating the process.

Note: When a zone is running in Pull mode, an asterisk is displayed beside the message in the Status column of the Agent console's main window. (See the following screen capture.)



SIF Registration > SIF Version

This setting determines the version of the SIF specification that the Agent uses to report SIF Events to zones



Default

The default is SIF 2.0r1. . Although the PowerSchool Agent can receive and process messages in any version of SIF—including 1.0r1, 1.0r2, 1.1, and 1.5—it will report SIF Events using only the version of the specification chosen here.

Override

The override setting allows the Agent to register itself in a selected version of SIF, responding only to requests specific to the override setting while still publishing events in the selected "Default" SIF version. This setting should be used only by administrators or users familiar with how SIF versioning governs zones.

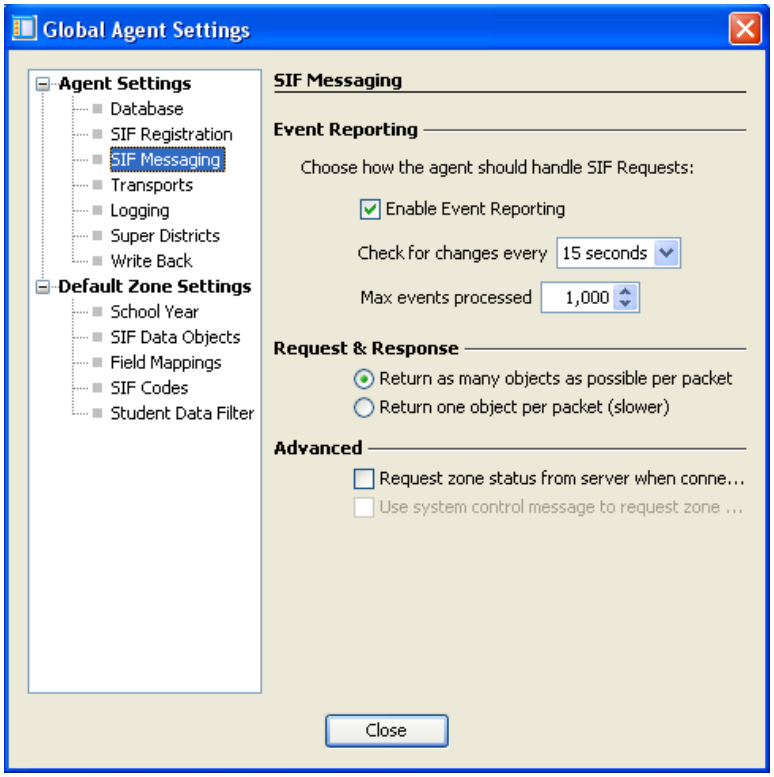
Note: Only administrators or users familiar with the SIF versioning governing their zones should override the default setting. Events will only be published in the selected "Default" SIF Version.

When to Change

Administrators must choose the version of SIF the Agent will use to report SIF Events. Select the version that is used by the majority of your subscribing Agents. SIF 2.0r1 specifications dictate that a given message can only be delivered to those Agents that support the version of SIF used to produce the message. Consequently, if a subscribing Agent does not support the version of SIF selected here, it will not receive SIF Events from PowerSchool. (Messages destined to this Agent would be discarded by the Zone Integration Server.)

SIF Messaging

SIF Messaging settings control how the Agent responds to queries and how often it checks PowerSchool for changes in data. The defaults are recommended for most installations, although you may wish to decrease the Event Reporting frequency to reduce network traffic and access to the PowerSchool database files.



Event Reporting

The Agent reports SIF events only if enabled to do so and only at selected intervals. Check the "Enable Event Reporting" box to enable the reporting of SIF events, and select the intervals at which you would prefer the Agent to report those events. By default, Event Reporting is enabled and occurs every 60 seconds.

Request & Response

This setting controls how the Agent responds to queries. If the **Return as many objects as possible per packet** radio button is selected, the PowerSchool Agent will fit as many objects into each response message as possible. The requesting Agent's maximum buffer size is used to calculate the size of response packets. For example, if a requesting Agent with a maximum buffer size of 100K bytes queries PowerSchool for all student records, the Agent will divide the responses into chunks of 100K, perhaps resulting in a few dozen messages, depending on the number of students in the school. This approach results in the optimal number of packets, thereby reducing network and processing overhead.

In some cases, particularly during diagnostics, it may be useful to have the Agent respond to queries with a single packet per object. To enable this mode, select the **Return one object per packet (slower)** radio button. For example, if a requesting Agent issued a query for all students, and 1200 students were enrolled in the school, the PowerSchool Agent would respond with 1200 individual packets, each consisting of one student object. This mode results in much slower overall processing by the requesting Agent because it must process many more messages.

Default
The default is "Return as many objects as possible per packet".

When to Change
Change this setting to "Return one object per packet" only when it is easier to diagnose problems if query responses are packaged into individual response packets (e.g. one record in a response is resulting in an XML Validation error but you're not sure which one). Once you've isolated the problem, revert to the "Return as many objects as possible per packet" setting.

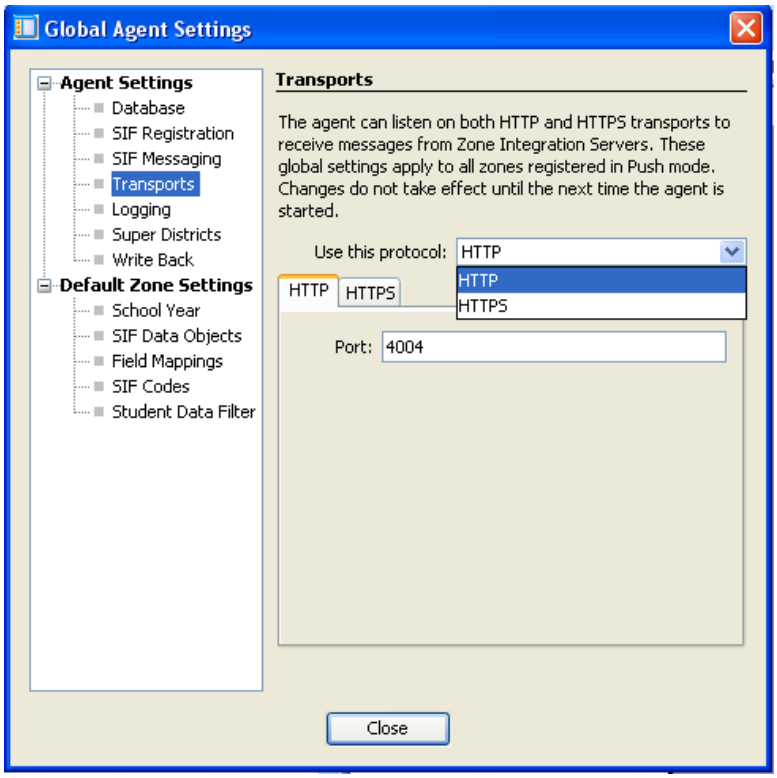
Advanced

By default, the Agent will "Request zone status from server upon connection" and "Use system control message to send request to server." Keeping these features enabled is recommended. If your Zone Integration Server does not support requests for Zone Status, or if the ACL for the Agent does not have permission to request zone status, uncheck these boxes to connect to the Zone Integration Server.

Transports

The Transports settings control how the Agent communicates with the Zone Integration Server over the HTTP or HTTPS transport protocols.

> **IMPORTANT:** For additional information on configuring HTTPS and using the Certificate Manager, refer to the Security section of this guide.



Protocol

Choose the networking protocol to communicate with the Zone Integration Server when the Agent is running in Push mode. (In Pull mode, the protocol setting is used; however, the port setting is not used.) The default is HTTP. When the Agent starts up, it will establish a networking socket on the specified port to "listen" for incoming messages sent by the Zone Integration Server.

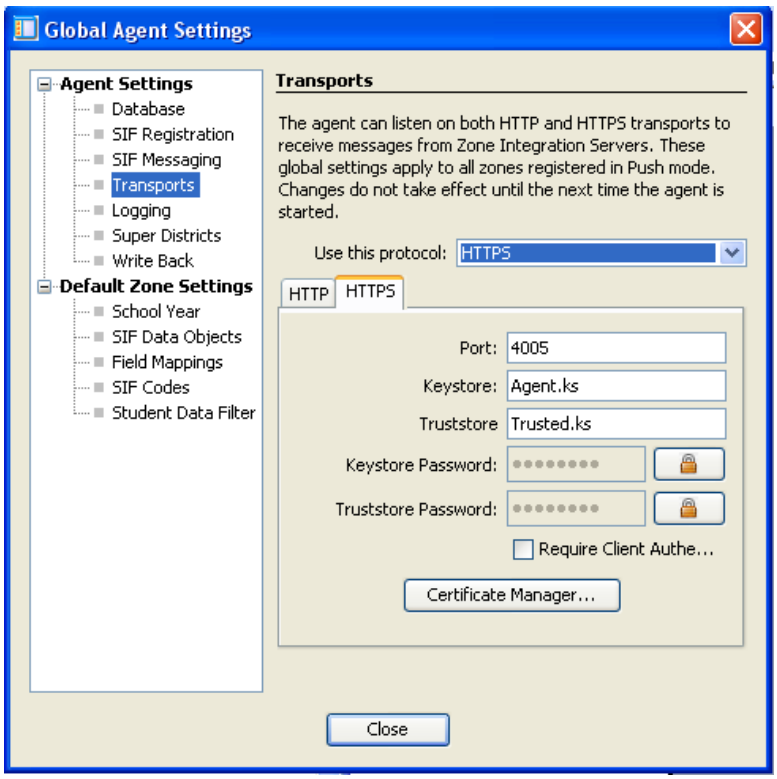
> **NOTE**: **The protocol chosen here must match the protocol used in the Zone URL field of each Zone**. In other words, you cannot send messages to the ZIS over HTTPS but configure the Transports settings to receive messages over HTTP. The protocols must match.

HTTP Port

This is the port the Agent will listen on for incoming HTTP traffic when the Protocol field is set to HTTP. The factory default is 60032. Change the port number only if another application on the computer is already using this port.

HTTPS Port

This is the port the Agent will listen on for incoming HTTPS traffic when the Protocol field is set to HTTPS. The factory default is 60033. Change the port number only if another application on the computer is already using this port.



Certificate Manager

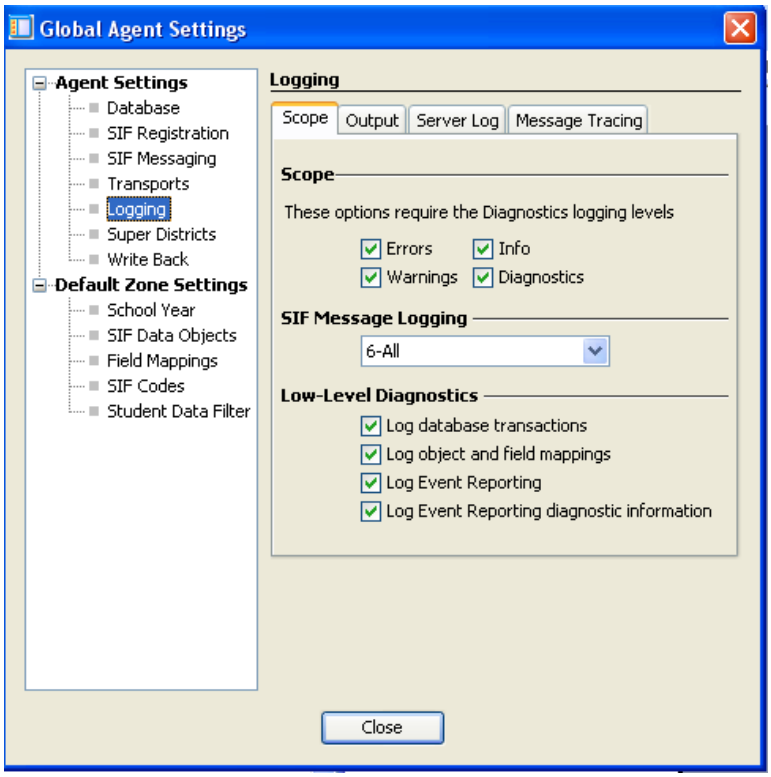
From the Certificate Manager, view or select Agent and Server certificates to be trusted by the Zone Integration Server.

NOTE: For detailed instructions on importing Agent and Server security certificates, consult the Security section of this guide.

Logging

This group of settings controls the volume and level of diagnostic information written to the Agent and Zone logs. Log files are found in the Agent's "logs" sub-directory.

Logging > Scope Tab



Scope

These checkboxes control how much information is written to the log files. Simply check the box beside the information you want the log to include.

Logging Setting	Default
Errors	√
Info	√
Warnings	√
Diagnostics	√
SIF Message Logging	(Set to 0)
Log database transactions	√
Log object and field mappings	√
Log Event Reporting	√
Log Event Reporting diagnostic information	√

SIF Message Logging

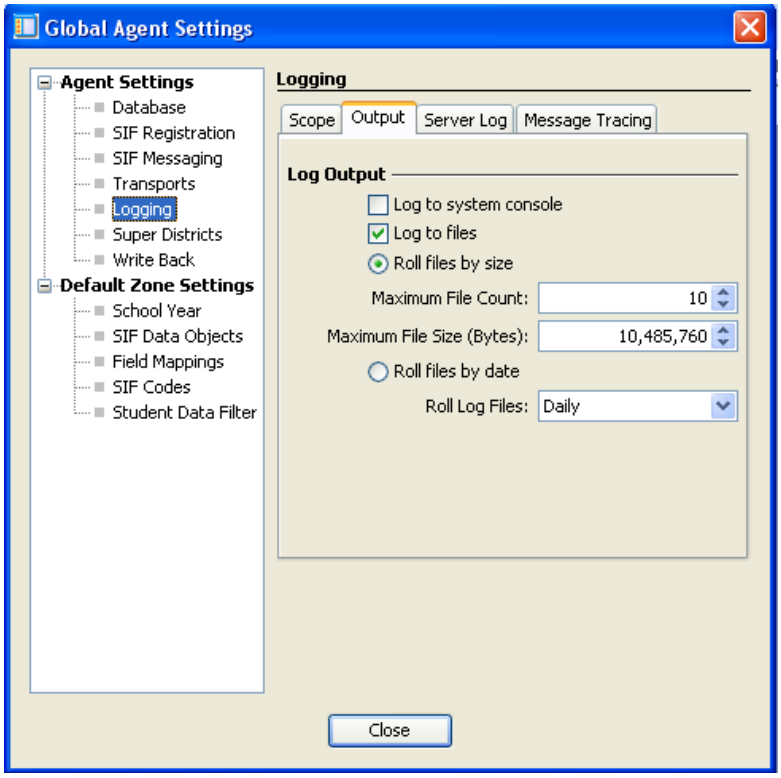
This setting controls how much if any low-level SIF Messaging activity is written to the log files, independent of any PowerSchool-related activity. Experiment with these settings to determine how much logging is desired. For example, if you're interested in viewing the actual SIF infrastructure messages that are exchanged between the Agent and Zone Integration Server, choose the "4-Detailed" level or higher. If you're only interested in seeing the SIF message identifiers but not the actual payload of each message, decrease the logging level to "2-Moderate". To view all SIF activity logging, choose "6-All".

Low-Level Diagnostics

Use these checkboxes to choose the types of PowerSchool-related activities that will be written to the log files. For example, to view details about each change captured in the PowerSchool database whenever the Agent reports a SIF Event, check the "Log Event Reporting" and "Log Event Reporting Details" check boxes.

Note: The "Log Event Reporting Details" setting is considered a *diagnostic* log level, so "Diagnostics" must also be checked at the top of the page.

Logging > Output Tab



Log to System Console / Files

Choose options for logging SIF messaging to the System Console and/or to designated files.

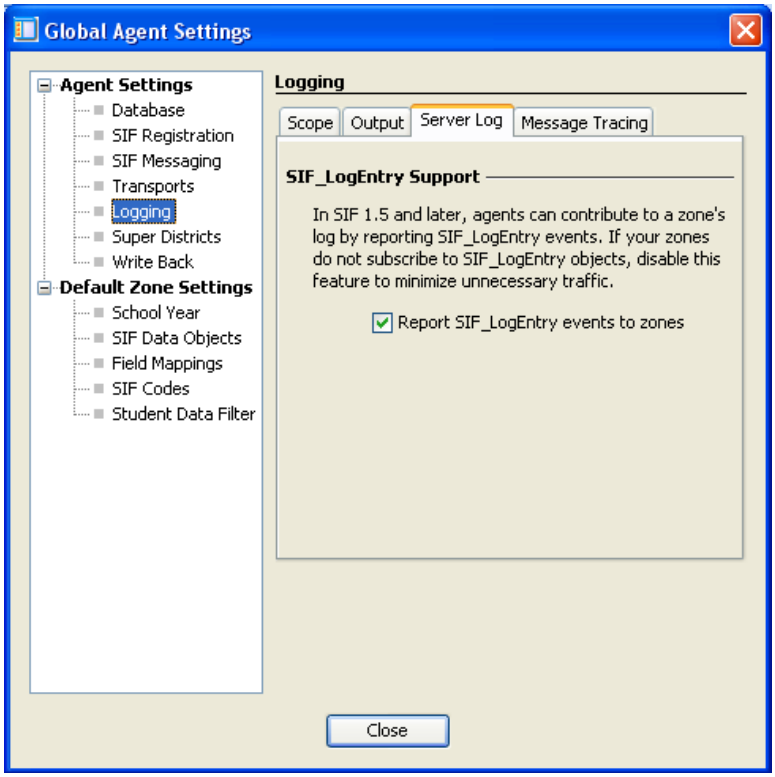
Roll Files by Size

Choose the maximum file count and size.

`Roll Files by Date`

Choose to roll files hourly, daily, weekly, or monthly.

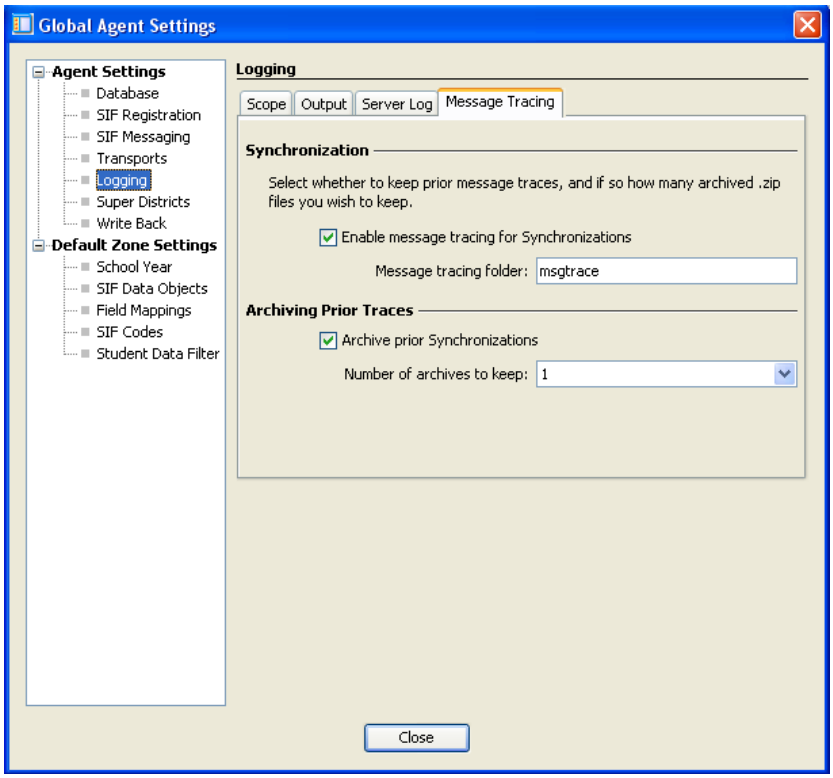
Logging > Server Log



`SIF_LogEntry Support`

Enables or disables the Agent's ability to report SIF_LogEntry events to the Zone's log.

Logging > Message Tracing



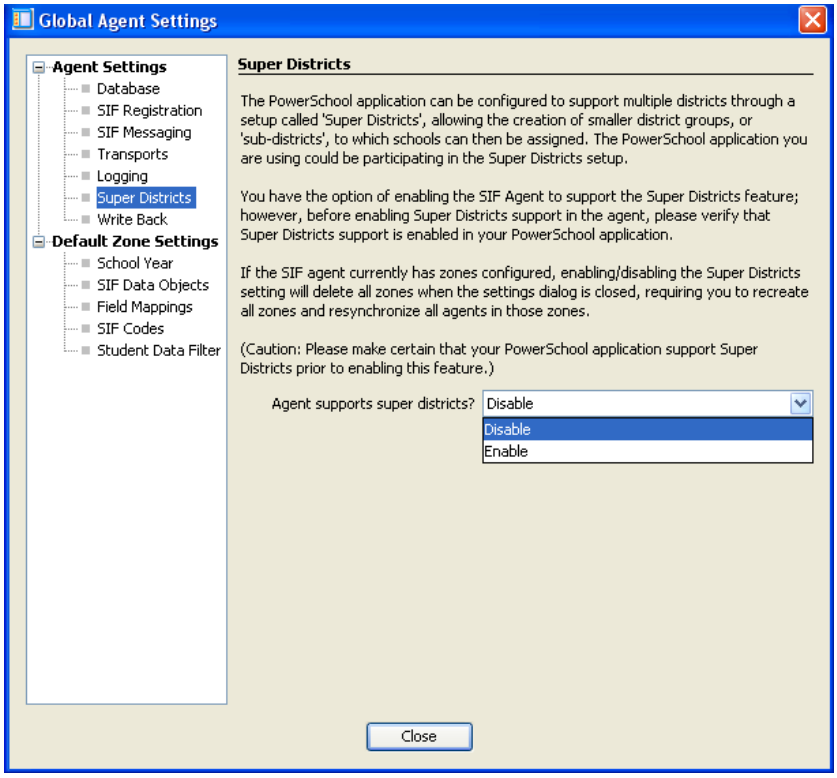
Synchronization

Enables the Agent to write out and/or archive SIF responses received during synchronization. Data Solutions Support reviews these message tracing files to diagnose synchronization problems.

Archiving Prior Traces

Determines the number of prior synchronizations that will be archived.

Super Districts



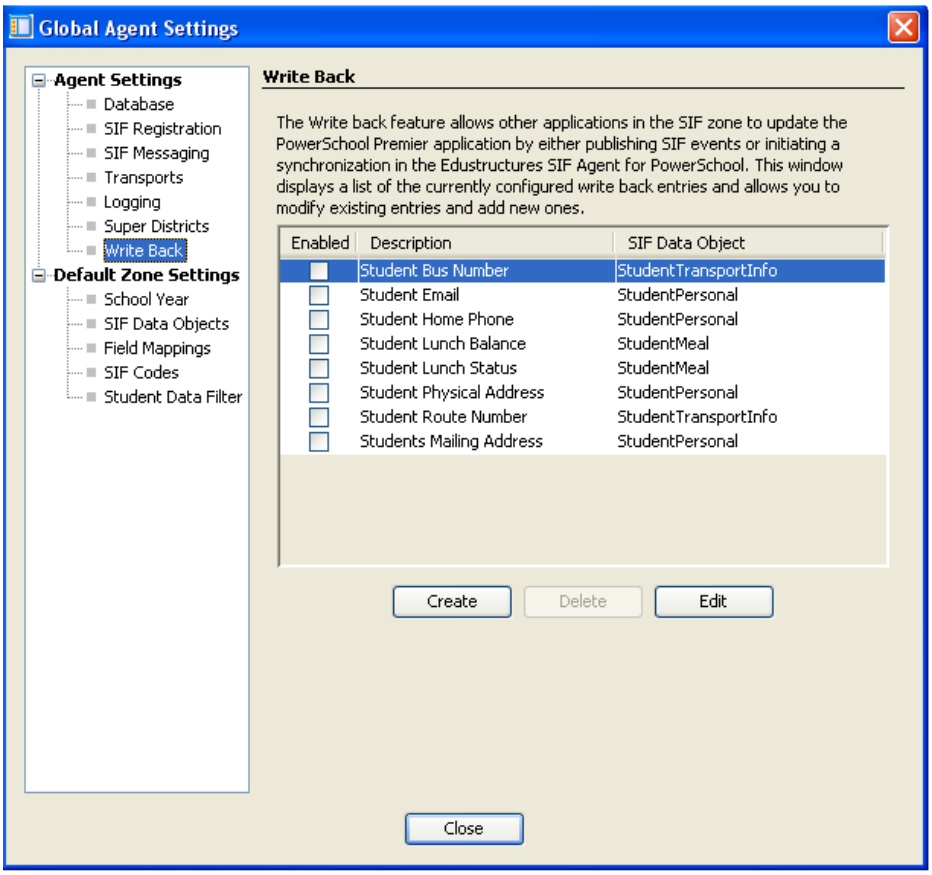
The PowerSchool application you are using may be participating in a super districts setup. This allows sub-districts to be created and each school can be a member of those sub-districts. When super districts are enabled in the agent, the agent will read district zone information from the sub-districts table in PowerSchool.

If the agent currently has zones configured, changing this setting will delete all zones when settings dialog is closed and you will need to recreate all the zones. Agents in these zones will also need to be resynchronized.

(Note: Before you enable this feature, please verify that your PowerSchool application supports Super Districts.)

The Super Districts feature is enabled/disabled from a drop-down list in the "Agent supports super districts?" field.

Write Back



The Write Back feature allows other applications in the SIF zone to update the PowerSchool Premier application. The Write Back feature updates the PowerSchool application with the data from other applications by publishing SIF events or initiating synchronization in the SIF Agent for PowerSchool.

The Write Back screen displays the currently configured Write Back entries. Columns in the Write Back screen include:

Enabled: Check this box to enable a write back entry.

Description: The data that will be updated.

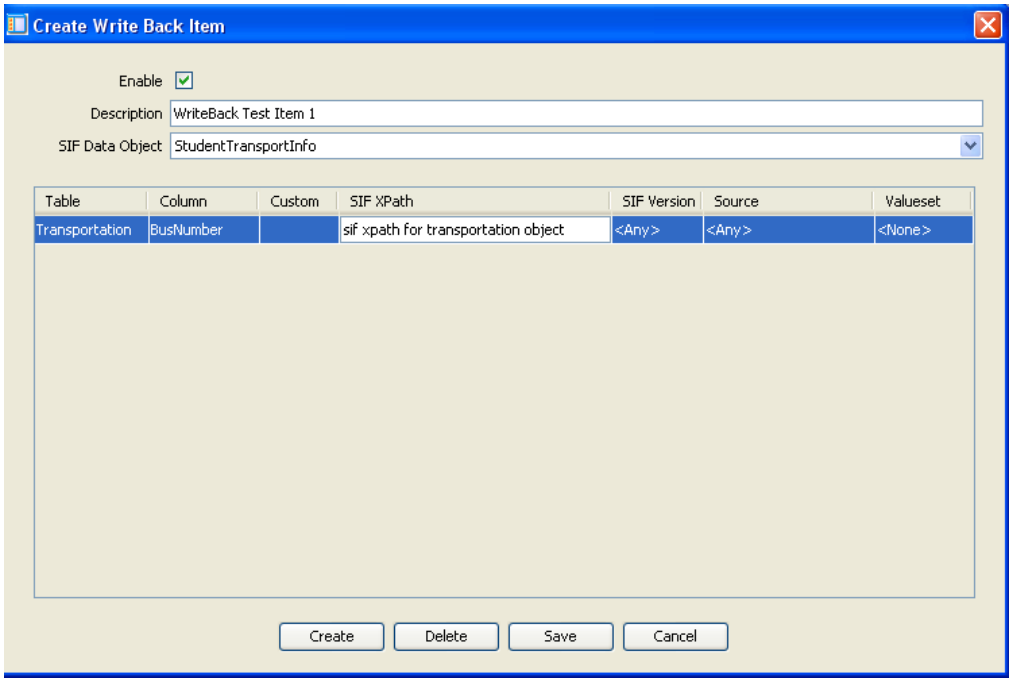
SIF Data Object: The object from which the data will be drawn.

To create a write back entry

1. Start the SIF Agent for PowerSchool.
2. From the main console, go to File > Agent Settings > Write Back.
3. The Write Back window is displayed.

4. Click the **Create** button.

5. The **Create Write Back** Item window opens.



6. Check the **Enable** box at the top of the screen. (You can also enable the entry later, on the Write Back screen.)

7. Type a description into the Description field. (Choose a title or phrase with which you can easily identify the write back entry you want to create.)

NOTE: The Create Write Back command buttons are inactive until a description is entered.

8. Choose a SIF Data Object from the SIF Data Object drop-down. (Currently, the default objects for which you can create a write back entry are StaffPersonal, StudentMeal, StudentPersonal, and StudentTransportInfo.)

9. Click **Create.**

   The columns in the Create Write Back window are activated with drop-downs and data fields for defining the write back entry.

   Table: This drop-down lists the PowerSchool database tables that will accommodate the write back entry you are creating.

   Column: This drop-down lists the location (column field) within the PowerSchool database table where the write back data will be used.

   Custom: This drop-down lists the location (custom column field) within the PowerSchool database table where the write back data will be used. Some PowerSchool tables have a Custom column (Students and Teachers, for example) which allows additional data to be associated with that record. Using pseudo

column names, additional data can be stored in the Custom column as key=value pairs for each record in the table. For example, one of the pseudo column names in the Students table is Graduation Date. A Graduation Date=2011 key value pair can then be stored in the Custom column (with other key value pairs) for each record in the Students table.

SIF XPath: Enter the path through which SIF data should flow for this write back entry.

SIF Version: Select the version of SIF with which this write back entry should comply.

Source: Identify the source of the data this write back entry will manage.

Valueset: Valuesets translate SIF specification values to PowerSchool application values. If translation between SIF values and application values is required, choose the valueset which provides the correct translation. This may require creation of a new valueset. (For more detailed information about existing valuesets, see the SIF Agent for PowerSchool Mappings Guide.)

10. Click **Save.**

11. The Write Back window is returned, displaying the new entry.

To delete a write back entry

1. Start the SIF Agent for PowerSchool.

2. From the main console, go to File > Agent Settings > Write Back.

3. The Write Back window is displayed.

4. Select the entry you wish to delete.

5. Click **Delete.**

6. The selected Write Back entry is deleted, and the list is refreshed.

To edit a write back entry

1. Start the SIF Agent for PowerSchool.

2. From the main console, go to File > Agent Settings > Write Back.

3. The Write Back window is displayed.

4. Select the entry you wish to edit.

5. Click **Edit.**

6. The **Write Back Item** screen is displayed.

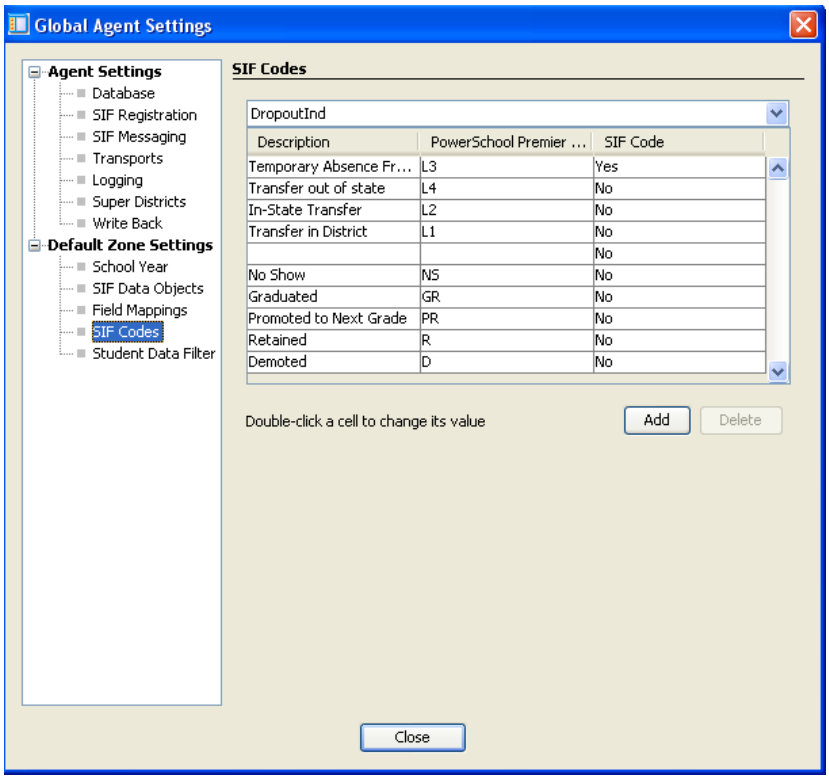
7. Change the Table, Column, Custom, SIF XPath, SIF Version, Source, or Valueset of the selected Write Back entry.

8. Click **Save.**

9. The Write Back screen returns, displaying the modified Write Back entry.

SIF Codes

You can edit SIF Codes from Agent Settings or from Zone Settings. For more details on how to edit SIF Codes, please see the detailed instructions in the Zone Settings chapter.



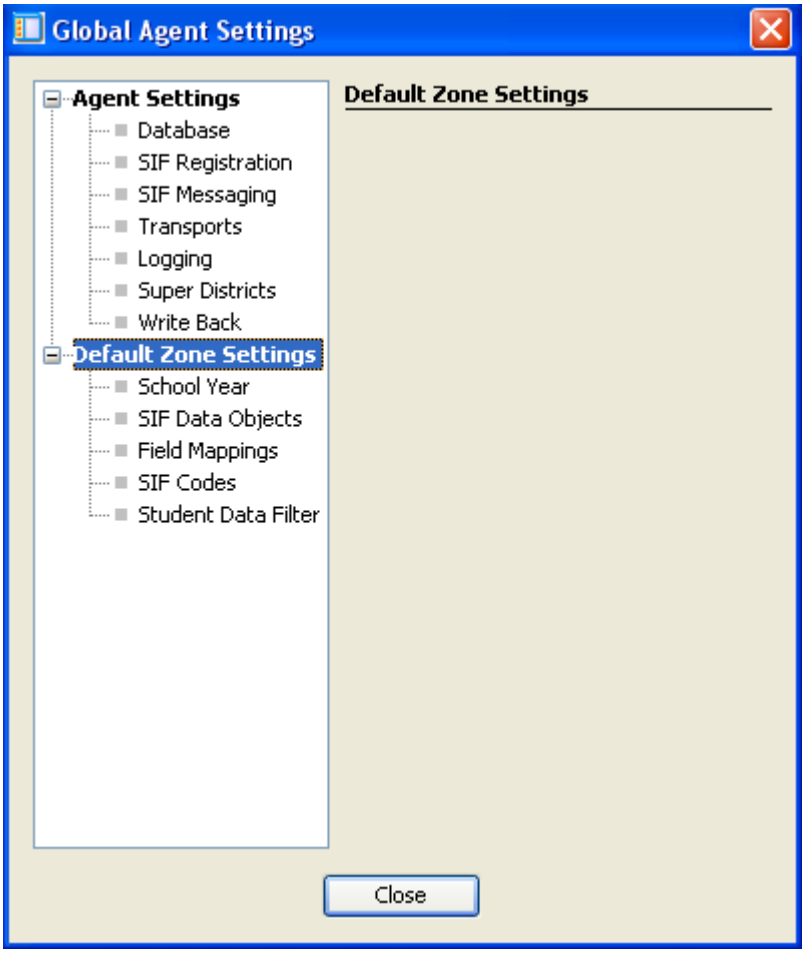
7. Default Zone Settings

These are the settings by which each zone will manage School Year, SIF Data Objects Field Mappings, and SIF Codes. (The options you choose here will be applied to every zone, but you can change settings for individual zones by disabling the defaults in the Zone Settings menu.) Some of these steps are covered in the "Basic Configuration" section of this guide.

To Set the Zone Defaults:

1. Open the SIF Agent for PowerSchool Console.

2. Choose File > Agent Settings. The Global Agent Settings window is displayed.

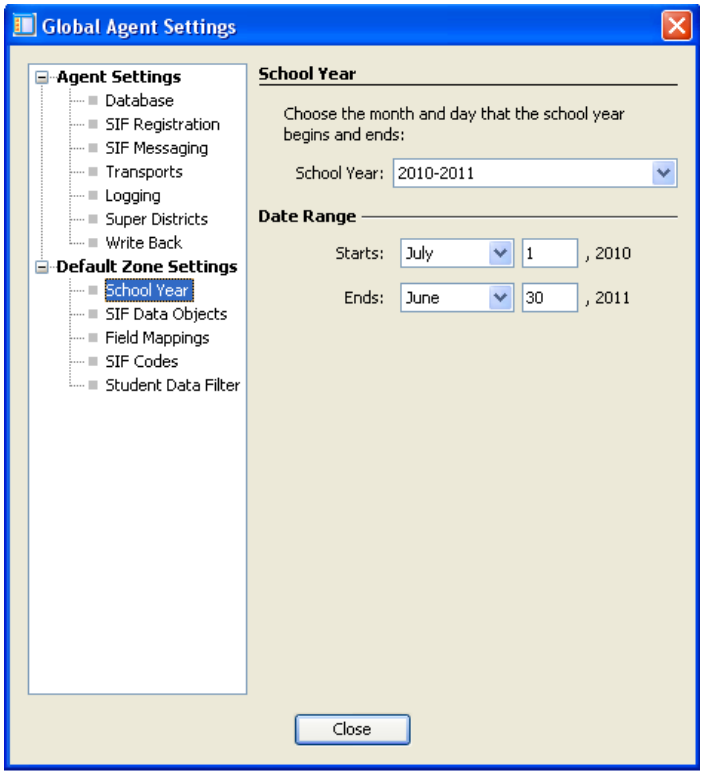


3. Choose from the following options in the Default Zone Settings tree to configure the Zone settings.

School Year

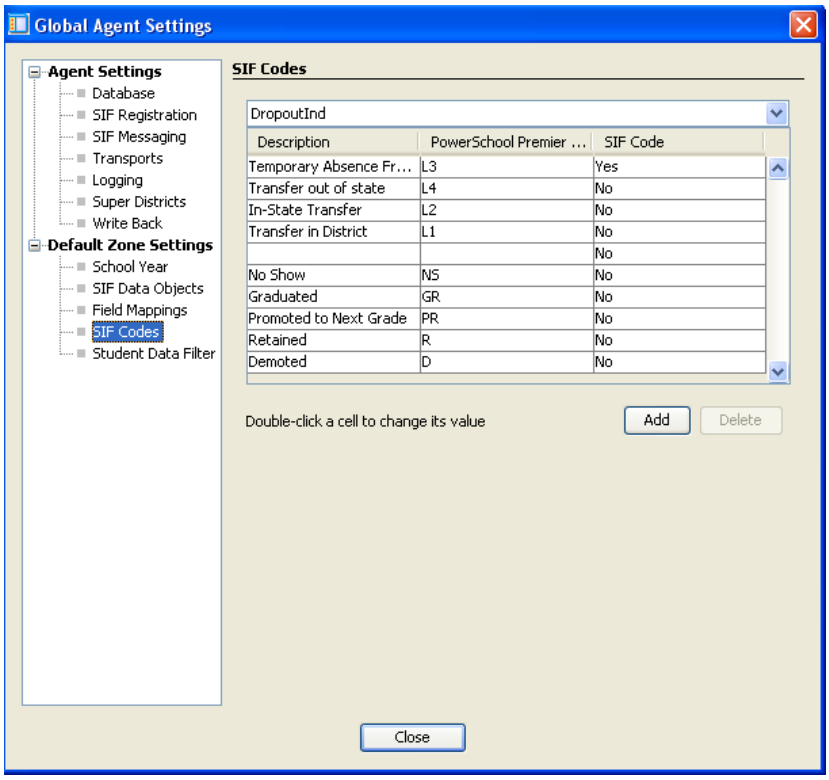
Choose the School Year and date range by which certain SIF Data Objects will be filtered.

Click **Close** to accept your changes and return to the main window of the Console.



SIF Data Objects Settings

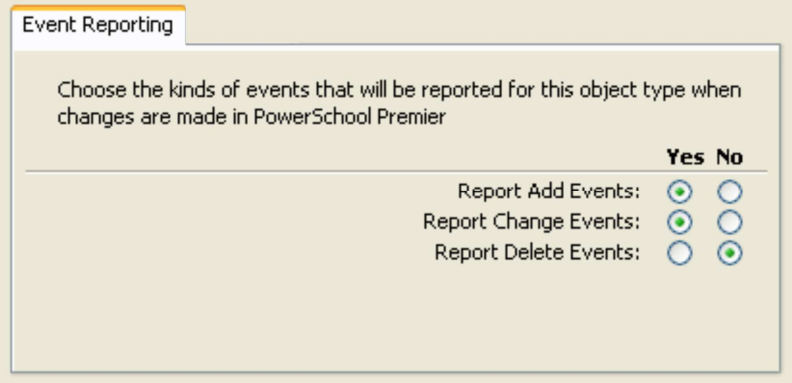
This group of settings controls how the Agent publishes and reports events for the SIF Data Objects supported by the Agent. To accept changes to these settings and return to the main screen of the console, click **Close.**



From the Default Zone Settings > SIF Data Objects page, you can select Event Reporting, Publishing and, where applicable, Subscription and Options settings for SIF data objects.

Event Reporting Tab

These settings control how the Agent reports SIF Events when changes are detected in the PowerSchool database.

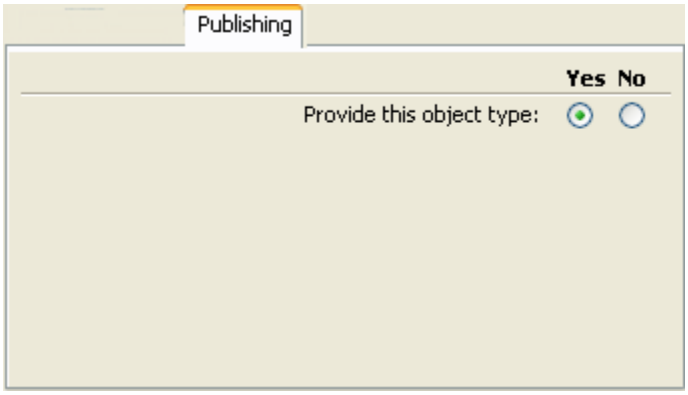


Use the Yes/No radio buttons to enable or disable reporting of Add/Change/Delete events for the selected data object. Note that reporting delete events is turned off by default, but the agent can be configured to report delete events for the following objects:

RoomInfo
RoomType
SchoolCourseInfo
SchoolInfo
SectionInfo
StaffAssignment
StaffPersonal
StudentContact
StudentPersonal
StudentSchoolEnrollment
StudentSectionEnrollment
TermInfo

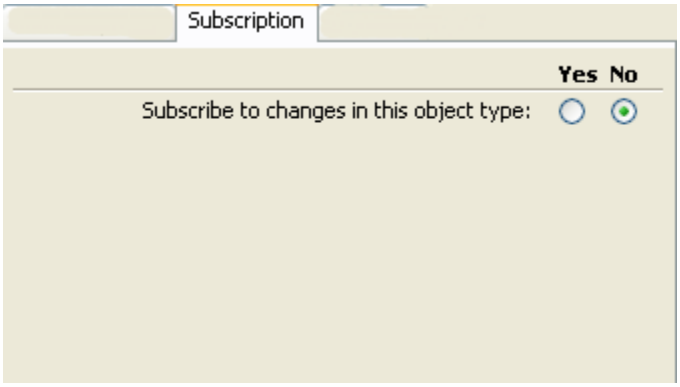
Delete in the PowerSchool application is **not recommended,** as there is a risk of creating orphan records. For example, deleting a student before deleting that student's school and section enrollment records would leave orphaned data in the application. From the SIF perspective, subscribing agents would receive the delete event for the student, but would not receive notification of deletion of the enrollment records.

Publishing Tab



Click the Yes/No radio buttons to authorize or unauthorize publishing of the selected Data Object.

Subscription Tab



The Subscription Tab is displayed only when StudentPersonal and StaffPersonal data objects are selected from the SIF Data Objects list.

Click the **Yes** radio button to set the Agent to subscribe to changes in the selected data object; click the **No** radio button to tell the Agent **not** to subscribe to changes in the selected data object.

Options Tab

The Options tab provides filters for these SIF Data Objects: StaffPersonal, StudentContact, StudentPersonal, and StudentSchoolEnrollment.

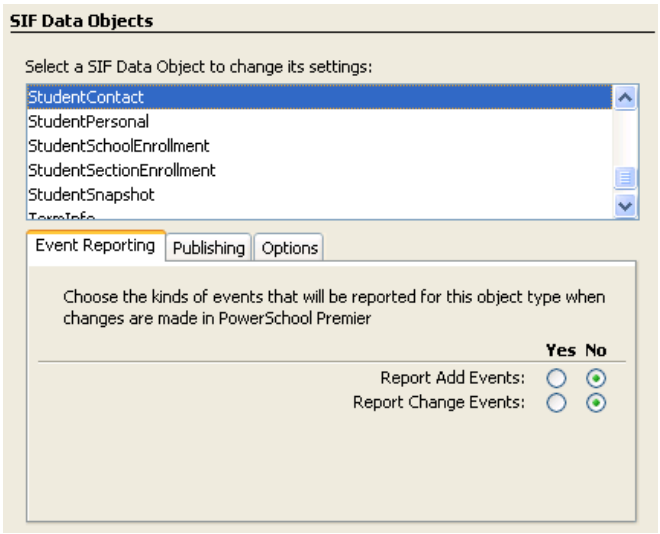
New Settings Tabs for StudentContact, StudentPersonal, and StudentSchoolEnrollment

StudentContact

Event Reporting Tab for StudentContact

The Event Reporting tab provides options for choosing the types of events that will be reported from the PowerSchool application.

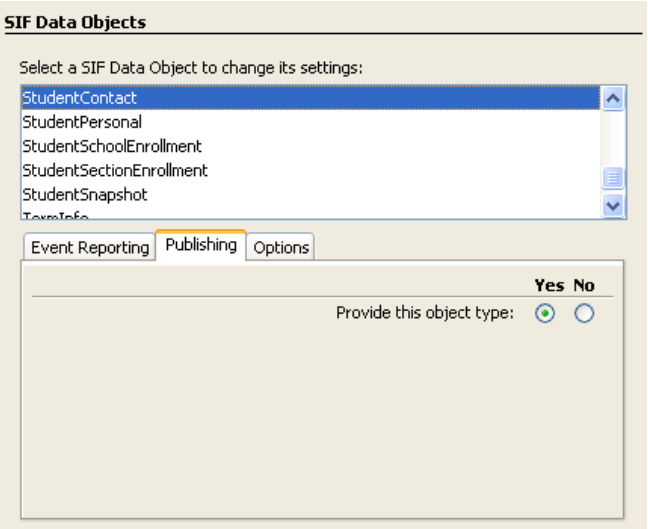
Note: The StudentContact settings in this tab are supported only by **PowerSchool Premier 6.1 or later**. In order to have access to current information for the possible selections in the "Read Contacts From" field in this tab, you must first **synchronize** with all Agents that subscribe to StudentContact.



Report Add Events (Default is "No"): When this feature is enabled, the Agent will report events added for this object in the PowerSchool application.

Report Change Events (Default is "No"): When this feature is enabled, the Agent will report changes affecting or associated with this object in the PowerSchool database.

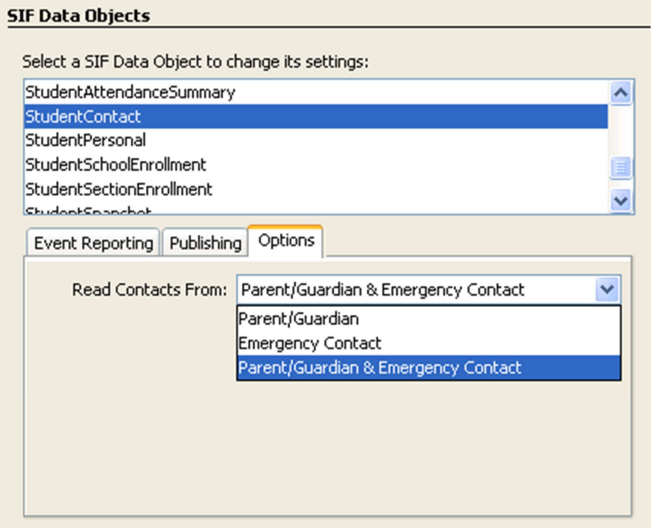
Publishing Tab for StudentContact



Provide this object type (Default is "Yes"): When this feature is enabled, the Agent will publish this object.

Options Tab for StudentContact

The Options tab for the SIF Data Object "StudentContact" provides a drop-down list of possible sources for student contact information.

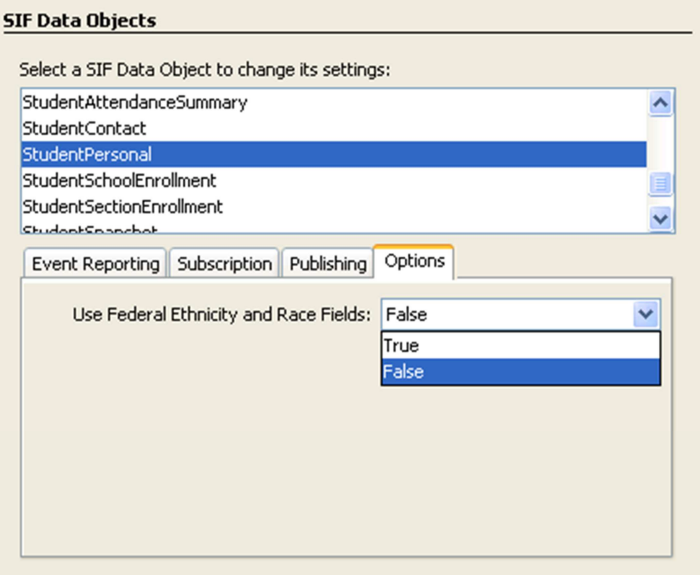


Read Contacts From (Default is "Parent/Guardian & Emergency Contact"): Choose from Parent/Guardian; Emergency Contact; or Parent/Guardian & Emergency Contact, for a possible total of six contacts per student.

StudentPersonal

Options Tab for StudentPersonal

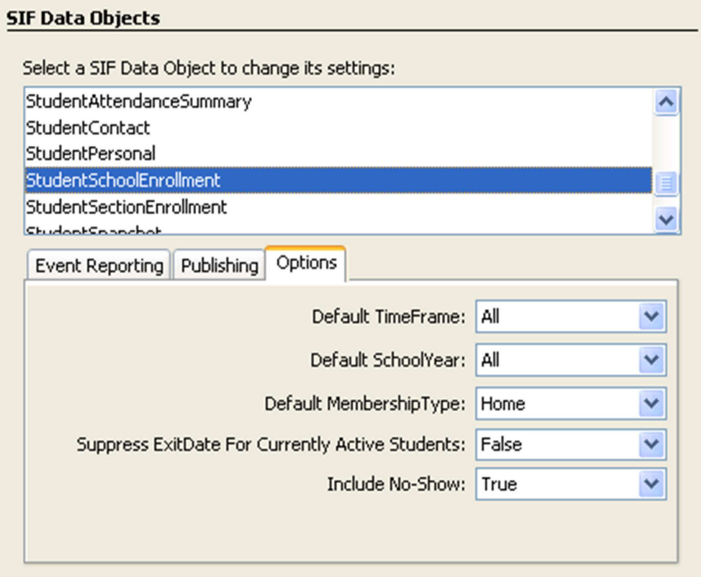
The **Options tab** for Student Personal displays a True/False setting to allow or disallow the use of federal ethnicity and race fields.



Use Federal Ethnicity and Race Fields (Default is "False"): Select "True" to enable these fields.

StudentSchoolEnrollment

Options Tab for StudentSchoolEnrollment



The Options tab for StudentSchoolEnrollment allows the selection of the following settings:

Default TimeFrame (Default is "All"):

- All—Current, Historical, and Future enrollment data for the object.
- Current—Records for active (presently enrolled) students
- Historical—Records of transferred, withdrawn, or graduated students
- Future—Records of students not currently enrolled, but scheduled for enrollment
- Current or Future—Records for active or scheduled enrollments

Default SchoolYear (Default is "All"):

- All—Records for all school years available in the database
- Current—Records for only the present school year

Default Membership Type (Default is "Home"):
This setting includes/excludes concurrent enrollments.

- Home – Includes only the school where the student is enrolled and with which the student's records are associated.
- All—Includes the student's "Home" school, and any schools that the student is concurrently enrolled in within the district.

Suppress ExitDate for Currently Active Students (Default is "False"):

When this feature is enabled, the Agent will suppress the ExitDate (when ExitDate is the last day of the school year) for currently active students. To suppress ExitDate, set this option to "True."

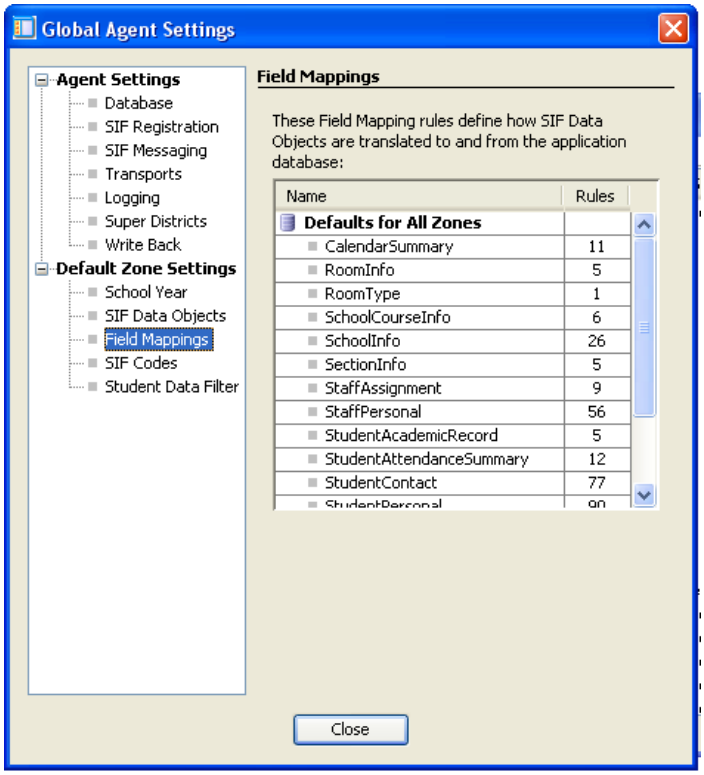
Include No-Show (Default is "True"):

Enrollment records for a student who has enrolled and withdrawn on the same date can now be excluded. To exclude "No-Show" student enrollment data, set this option to "False."

Field Mappings

One of the powerful features of the Data Solutions SIF Agent for PowerSchool is its flexibility in customizing the way SIF Data Objects are produced from fields in the PowerSchool database. In general, any built-in or user-defined field in a PowerSchool database table can be *mapped* to an element or attribute in a SIF Data Object.

The Agent's default mappings are appropriate for most installations; however, in some cases, these mappings will require fine tuning. Some instances requiring changes to the default mappings might include requirements to: publish additional fields; to change default SIF Codes assigned to elements such as student IDs, addresses, and telephone numbers; or to accommodate a subscriber Agent that has rigid data-mapping requirements.



Field Mapping Rules Summary

The Field Mappings panel lists each SIF Data Object supported by the Agent. The number of "Rules" for any given object reflects the number of elements that object encompasses. For example, the StudentPersonal object has many elements, including name and contact information, language, ethnicity, and many other identifiers.

SIF Codes

The Schools Interoperability Framework standard defines a consistent set of codes that are used for fields such as Grade Level, Ethnicity, Language, and English Proficiency. Each application must translate its own application-defined codes to these SIF-defined codes so that all Agents participating in a zone agree on a common set of values. The **SIF Codes** group of settings allows you to customize the PowerSchool-to-SIF translation tables used by the Agent when it publishes data to a zone.

Refer to the SIF Specification (available from the www.sifinfo.org website) for a complete list. The factory defaults reflect the SPEEDE standard to enable the Agent to more easily interoperate with older SIF 1.0r1 zones.

Before connecting the Agent to the Zone Integration Server, it is a good idea to verify that the factory default codes are appropriate for your district. Since codes such as Grade Level, Ethnicity, Entry, and Exit Codes are customizable in PowerSchool, it is usually necessary to configure the Agent's SIF Codes to reflect the specific PowerSchool values used at your district. For example, if your district uses "K" to represent the Kindergarten grade instead of the factory default of "00," the Grade Levels table must be changed to reflect this. Here is an overview of the options available and how to edit each of them.

To Set Default SIF Codes

1. Start the Agent.

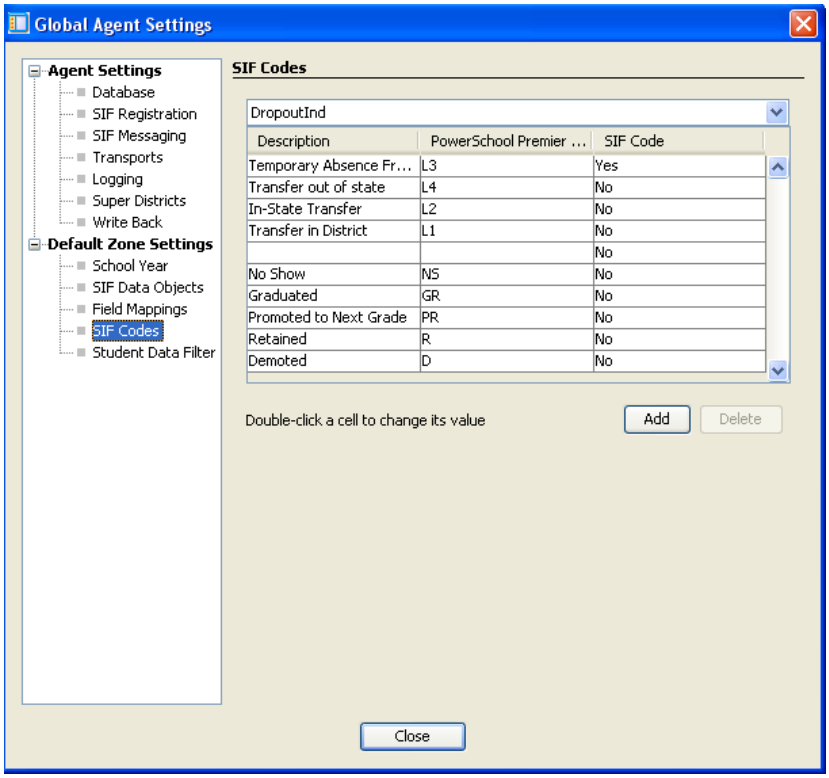
2. In the main window of the Console, highlight the Zone you wish to manage.

3. From the main menu of the Console, select **File > Agent Settings**.

4. The Global Settings window is displayed.

5. From the Default Zone Settings tree, click on SIF Codes.

6. The SIF Codes screen is displayed.



7. From the drop-down list, select the Translation Table you wish to manage (EnrollStatusCode, Ethnicity, Grade Level, etc.).

8. The list of SIF Codes for the selected table is displayed.

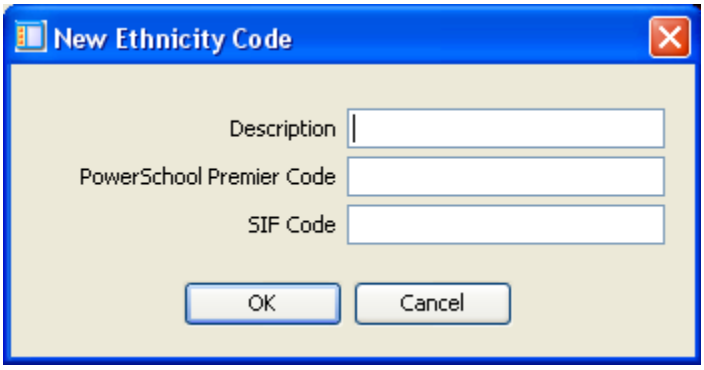
9. Double-click the target cell (Description, PowerSchool Premier Code, or SIF Code).

10. Enter new information or values into the target cell.

11. Close the SIF Codes window to accept your changes and return to the main window of the Console.

To Add a SIF Code from the Default Zone Settings Menu

1. Start the Agent.
2. In the main window of the Console, highlight the Zone you wish to manage.
3. From the main menu of the Console, select Zone > Zone Settings.
4. From the Zone Settings tree, click on SIF Codes.
5. The SIF Codes page window is displayed.
6. From the drop-down list, select the Translation Table to which you wish to add a SIF Code.
7. Click the **Add** button (located below the Translation Table).
8. The New Code dialog is displayed.



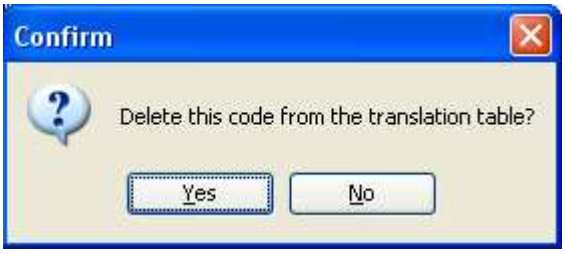
9. Enter the new Code information. The PowerSchool Premier Code is the value being used in PowerSchool. The SIF code is the valid code from the SIF Specification.
10. Click **OK** to accept your changes.

To delete a SIF Code

1. Start the Agent.
2. In the main window of the Console, highlight the Zone you wish to manage.
3. From the main menu of the Console, select Zone > Zone Settings.
4. From the Zone Settings tree, click on **SIF Codes**.
5. From the drop-down list, select the Translation Table from which you wish to delete a SIF Code.
6. Highlight the code you wish to delete.

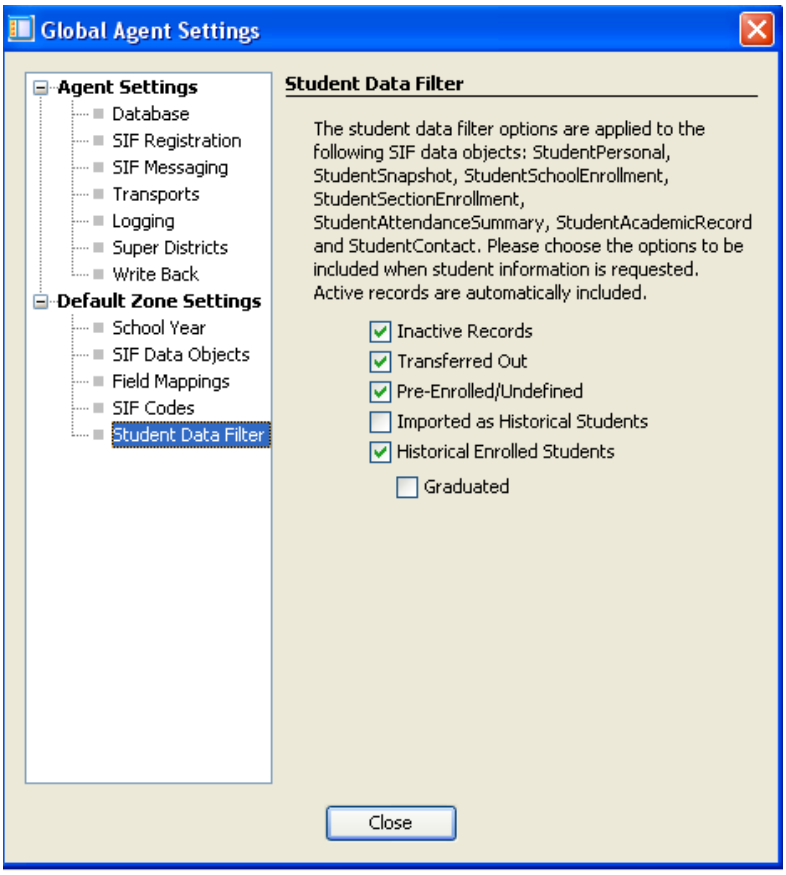
7. Click the **Delete** button, located below the Translation Table.

8. The Confirm Delete dialog is displayed.



9. Click "Yes" to delete this Code from the Selected Translation Table.

Student Data Filter



The **Student Data Filter** allows student data to be filtered and applied to the following SIF Data Objects: StudentPersonal, StudentSnapshot, StudentSchoolEnrollment, StudentSectionEnrollment, StudentAttendanceSummary, StudentAcademicRecord and StudentContact.

The Student Data Filter settings can be viewed or modified for default settings, zone group setting or zone specific settings via File->Agent Settings->Default Settings, Zone->Zone Group Settings or Zone->Zone Settings.

Data Filtering Options

Data filtering options include the following student record types**:**

Note: By default, Active student records are returned for every record request, and the following filter options are selected: **Inactive Records, Transferred Out**, and **Pre-Enrolled/Undefined**—the first three options in the list of Student Data Filters.

- Inactive Records
- Transferred Out
- Pre-Enrolled / Undefined
- Imported as Historical Students
- Historical Enrolled Students
    - Graduated (a sub-filter available only when the **Historical Enrolled Students** filter is selected).

SIF Data Objects to which Student Data Filter(s) Are Applied

Selected filters apply to the following objects:

- StudentPersonal
- StudentSnapshot
- StudentSchoolEnrollment
- StudentSectionEnrollment
- StudentAttendanceSummary
- StudentContact
- StudentAcademicRecord

8. Zone Configuration and Management

The final step in the configuration of the PowerSchool Agent is to define the SIF Zones to which it will connect.

Overview of SIF Zones in PowerSchool

The Schools Interoperability Framework features a scalable architecture in which applications and their data are organized into "zones." Each SIF Zone is managed by a Zone Integration Server. When two or more Agents register in a zone, they're able to communicate with one another by exchanging messages with the ZIS.

The data that flows through a zone is defined by the Agents—with the Data Solutions SIF Agent for PowerSchool, the set of records published to each zone can come from a district, a single school, or an aggregate zone (made up of multiple zones).

District Zones

"District" is the optimum zone type for PowerSchool zones configuration. Obviously, District zones can accommodate multiple schools, streamlining reporting and school-to-school data sharing efforts.

School Zones

One-zone-per-school configuration is possible with the Data Solutions SIF Agent for PowerSchool; however, Aggregate or District zone type settings should be considered for schools that are members of large districts, or have district and/or state-level reporting mandates.

Aggregate Zones

In some cases it is necessary to group two or more schools into a single zone. For example, a State Department or a Regional Service Agency may wish to connect to your SIF infrastructure in order to query SIF Data Objects for the purpose of vertical reporting. It would be cumbersome for this kind of application to connect to each school zone individually, especially in a large district. What's needed is a way for the district administrator to create a single, monolithic zone that represents all schools in the district. This way, the State Department can connect to one zone instead of tens or hundreds of school zones.

With the PowerSchool Agent, you can create "aggregate zones" that serve to aggregate the data from two or more school zones. Aggregate zones function as a single point of communication for many school zones. When a SIF Request is received, it is dispatched to all of the school zones that are members of the Aggregate Zone; the results are combined into a single response and returned to the requesting Agent. Similarly, when events are reported by a PowerSchool school, they're also reported to any Aggregate Zones of which the school is a member.

Creating School Zones

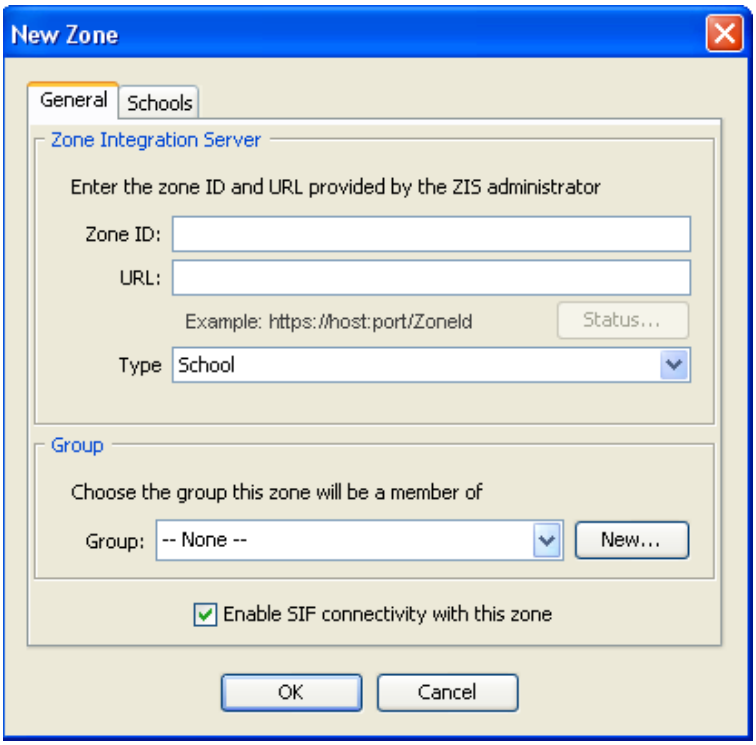
SIF Zones are defined and managed by a Zone Integration Server, not by the PowerSchool Agent. Before you can configure the Agent to connect to a zone, that zone must first be created and configured at the SIFWorks® Zone Integration Server.

Before proceeding, gather the following information:

- The IP address or hostname of the SIFWorks ZIS
- The protocol used by the SIFWorks ZIS (e.g. HTTP or HTTPS)
- The port number of the SIFWorks ZIS (7080 is the default)
- The Zone ID (e.g. "CLEMENTS_MS")

Next, follow these steps to define each school zone to which the Agent will connect:

1. Start the Agent.
2. Click on the PowerSchool icon on the system tray to open the Console.
3. Click **Connect**.
4. From the main menu of the Console, choose **File > New Zone**.
5. The **New Zone** dialog box is displayed.



6. Fill in the Zone Integration Server fields:

Field	Description
Zone ID	The ID of the zone. This value is case-sensitive and must precisely match the zone ID on the Zone Integration Server that manages this zone
Zone URL	The URL to connect to the Zone Integration Server that manages this zone. When connecting to the SIFWorks Enterprise ZIS, the format of the URL is: "http://hostname:port/ZoneID". Note the ZoneID is case sensitive and must be entered exactly as it appears in the SIFWorks ZIS Console.
Zone Type	School, Aggregate, or District; this setting determines zone "membership," which can be a one or more schools, or one or more districts. Zone type determines the New Zone dialog: selecting "Aggregate" zone type will result in the display of the General and Zones tabs; **selecting "School" zone type results in the display of the General and Schools tabs**; selecting "District" zone type results in the display of the General, Districts, and Schools tabs.

7. Select "School" from the Zone Type drop-down list.

8. The New Zone dialog now displays the "Schools" tab, in addition to the "General" tab.

9. Choose the Group, if any, for this zone.

10. Check "Enable SIF connectivity with this zone."

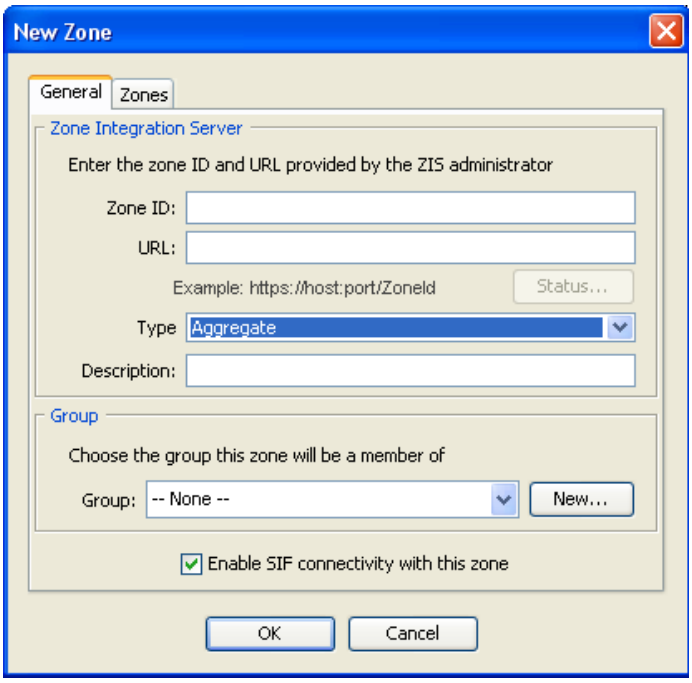
11. Click on the **Schools** tab, and select the school(s) you wish to add to the zone.

12. Click **OK** to save your changes. The new zone is added to the main window of the Console.

Creating Aggregate Zones

Follow these steps to create an Aggregate Zone:

1. Start the Agent and the console.
2. From the main menu of the console, choose **File > New Zone**.
3. The **New Zone** dialog is displayed.



4. Fill in the Zone Integration Server fields.

Field	Description
Zone ID	The ID of the zone. This value is case-sensitive and must precisely match the zone ID on the Zone Integration Server that manages this zone
Zone URL	The URL to connect to the Zone Integration Server that manages this zone. When connecting to the SIFWorks Enterprise ZIS, the format of the URL is: "http://hostname:port/ZoneID". Note the ZoneID is case sensitive and must be entered exactly as it appears in the SIFWorks ZIS Console.

5. Select **Aggregate** from the **Type** drop-down.
6. The New Zone dialog displays the General and Zones tabs.
7. Optional: in the description field, enter a name or phrase that will be displayed in the main console to identify this aggregate zone .

8. In the **Group** section of the New Zone dialog, choose or create a group, if any, with which this aggregate zone will be associated.

9. Click on the **Zones tab** and select the zones to participate in this aggregate zone.

10. Click **OK** to save your changes.

Creating District Zones

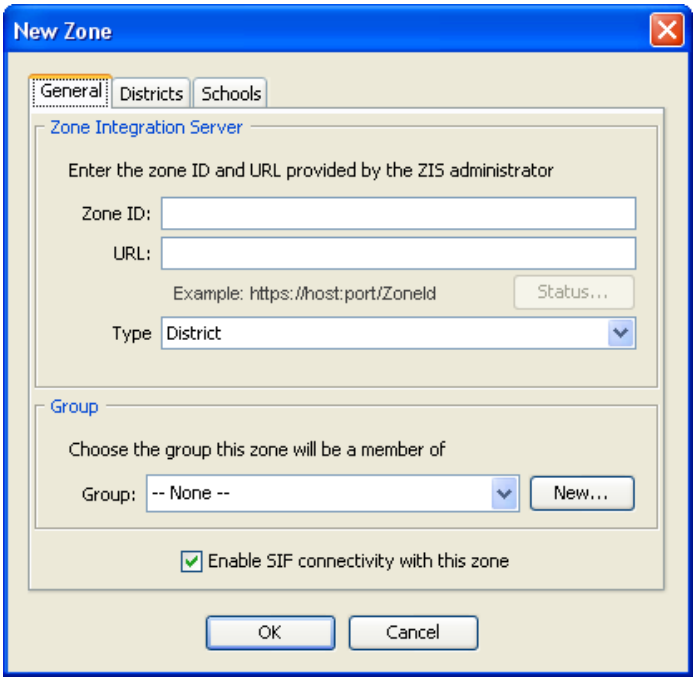
1. Start the Agent.

2. Click on the PowerSchool icon on the system tray to open the Console.

3. Click **Connect**.

4. From the main menu of the Console, choose **File > New Zone**.

5. The **New Zone** dialog box is displayed.



6. Fill in the Zone Integration Server fields.

Field	Description
Zone ID	The ID of the zone. This value is case-sensitive and must precisely match the zone ID on the Zone Integration Server that manages this zone
Zone URL	The URL to connect to the Zone Integration Server that manages this zone. When connecting to the SIFWorks Enterprise ZIS, the format of the URL is: "http://hostname:port/ZoneID". Note the ZoneID is case sensitive and must be entered exactly as it appears in the SIFWorks ZIS Console.

7. Select the Zone type.

Zone Type	School, Aggregate, or District; this setting determines zone "membership," which can be a one or more schools, or one or more districts. Zone type determines which tabs are displayed in the New Zone dialog: • selecting "Aggregate" zone type will result in the display of the General and Zones tabs; • selecting "School" zone type results in the display of the General and Schools tabs; • **selecting "District" zone type results in the display of the General, Districts, and Schools tabs**.

8. Choose the Group, if any, for this zone.

9. Check "Enable SIF connectivity with this zone."

10. Click on the **Districts** tab, and select the district you wish to add to the zone.

11. Click on the **Schools** tab; from the list of schools in the district, select schools to participate in this zone.

12. Click **OK** to save your changes. The new zone is added to the main window of the Console.

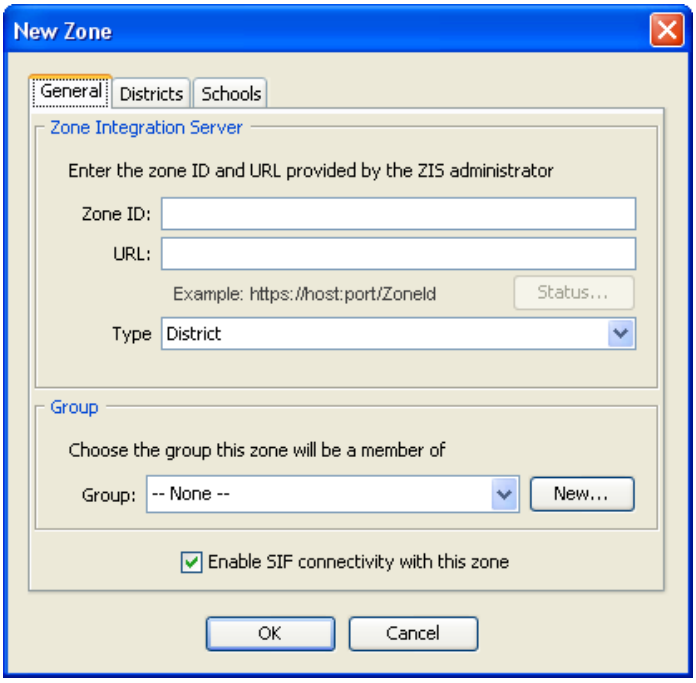
Creating District Office Zones (Publishing District Office Staff Information)

The SIF Agent for PowerSchool now supports the publishing of district staff data. District office staff can now be associated with a "school" called “District Office” in the PowerSchool application. For district zones, you can add the District Office school to a district zone; for school zones, you can create a new zone with District Office as the school. SchoolInfo, StaffPersonal and StaffAssignment are reported through the new District Office “school.”

1. Start the Agent and the console.

2. From the main menu of the Console, choose **File > New Zone**.

3. The **New Zone** dialog box is displayed.



4. Fill in the Zone Integration Server fields.

Field	Description
Zone ID	The ID of the zone. This value is case-sensitive and must precisely match the zone ID on the Zone Integration Server that manages this zone
Zone URL	The URL to connect to the Zone Integration Server that manages this zone. When connecting to the SIFWorks Enterprise ZIS, the format of the URL is: "http://hostname:port/ZoneID". Note the ZoneID is case sensitive and must be entered exactly as it appears in the SIFWorks ZIS Console.

5. Select zone type from the Zone Type drop-down list.

NOTE: If you use **Super Districts** (see Agent Settings), the District Office is supported **only through a school zone**.

Zone Type	School, Aggregate, or District; this setting determines zone "membership," which can be one or more schools, or one or more districts. Zone type determines which tabs are displayed in the New Zone dialog: • selecting "Aggregate" zone type will result in the display of the General and Zones tabs; • selecting "School" zone type results in the display of the General and Schools tabs; • selecting "District" zone type results in the display of the General, Districts, and Schools tabs.

6. Choose the Group, if any, for this zone.

7. Check "Enable SIF connectivity with this zone."

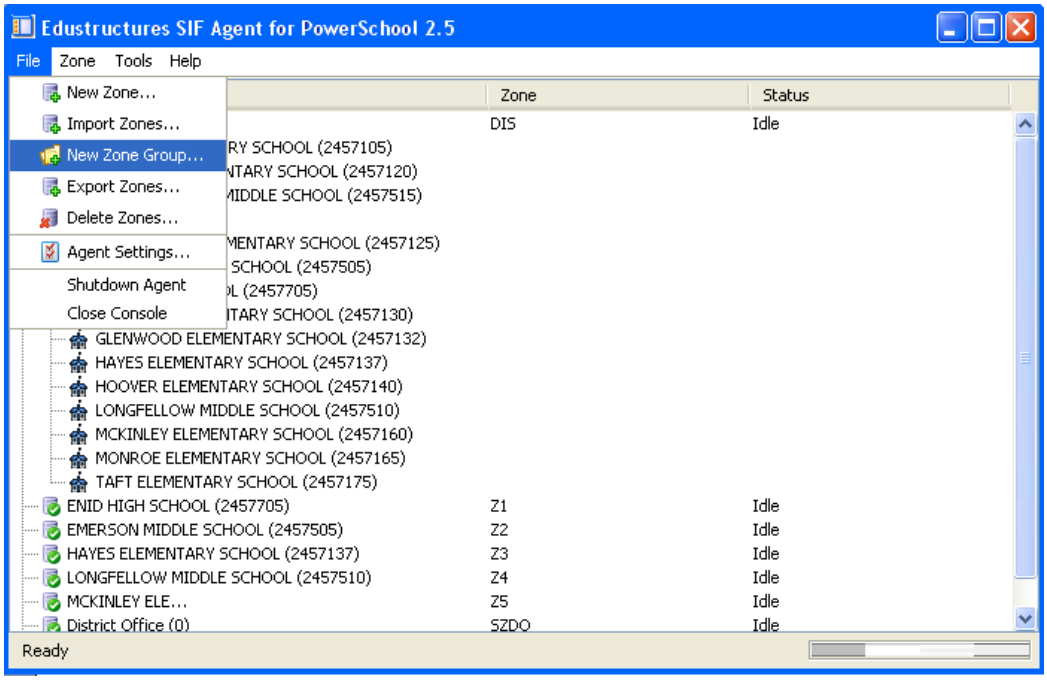
8. If you selected a District zone type, click on the **Districts** tab, and select the district you wish to assign to the zone; otherwise, continue with the next step.

9. Click on the **Schools** tab; from the list of schools in the district, select **District Office.**

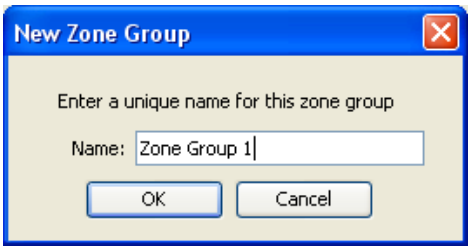
10. Click **OK** to save your changes. The new zone "District Office" (a new, single school zone, or part of a selected district zone) is added to the zones view of the console.

Creating Zone Groups

1. Start the Agent.
2. Open the Console and click **Connect**.
3. From the main menu of the Console, choose **File > New Zone Group.**



4. The **New Zone Group** dialog box is displayed.



5. Enter a unique name for the new zone group.
6. Click **OK** to accept the name of the new zone group.
7. The new zone group is displayed in the main window of the Console.

Viewing or Editing Zone Properties

The Zone Settings menu allows you to edit settings for any selected zone. (Default Zone Settings are globally applied, but you can choose alternate settings on a zone-by-zone basis through the Zone Settings menu.)

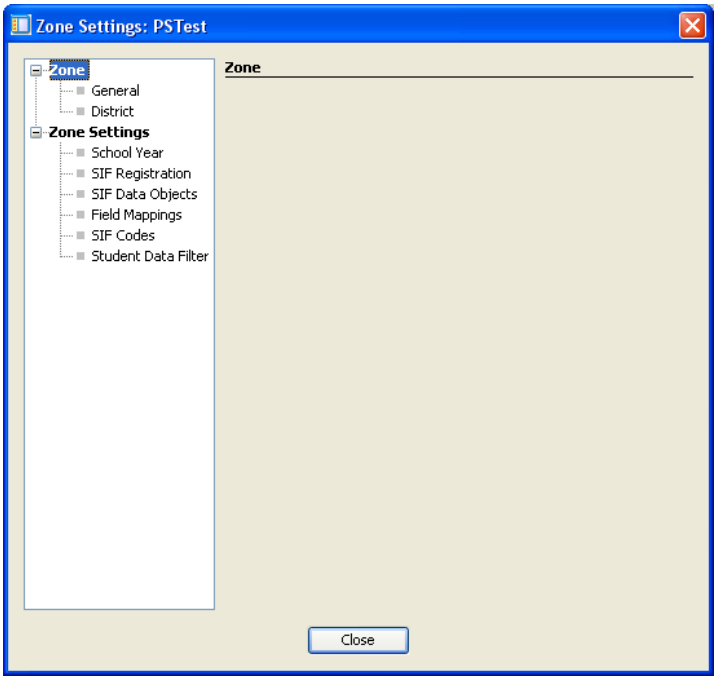
Connectivity Settings

To edit Zone Integration Server and SIF connectivity settings for an individual zone:

1. From the main window of the Console, highlight the Zone you wish to manage.

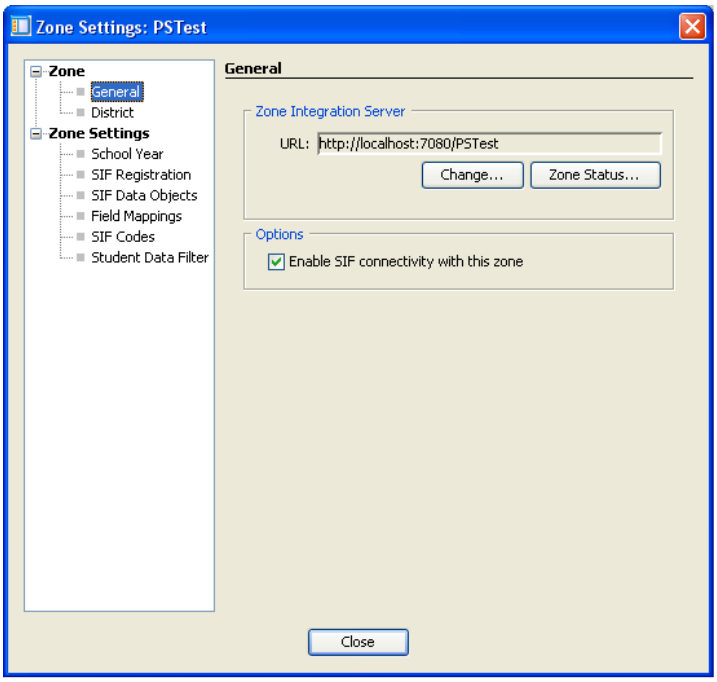
2. From the main menu, choose Zone > Zone Settings.

3. The Zone Settings window is displayed.



4. Under the Zone tree, click on the General node.

5. The **General** screen is displayed.



6. To Change the URL, click Change, and enter the new address.

7. Click Close to accept your changes.

Viewing General Zone Status

General zone status information is available in the Console's main window.

General zone status information

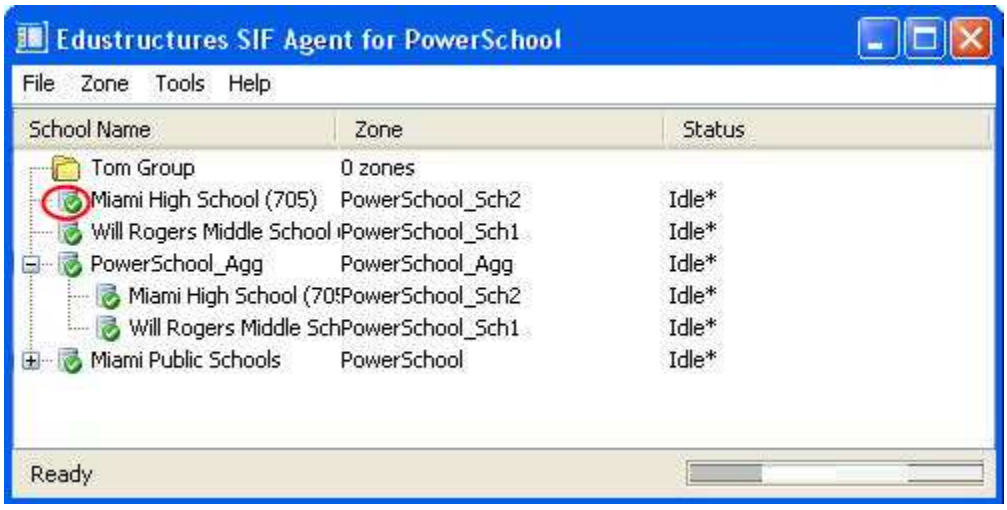
Although the Data Solutions SIF Agent for PowerSchool is designed to run unattended, the Console can provide a snapshot of the activity on each zone and alert you to errors that may require attention. In the Console's main window, general status information is provided through a condition icon (displayed with the district, school, or zone name) and a status message (displayed in the Status column).

Zone Condition Icons

One of three status icons may be displayed beside a zone name in the main window of the Agent console:

Icon	Condition	Description
	OK	The zone is **connected** to both the PowerSchool database and the Zone Integration Server (ZIS) and is idle or active. No attention is required.
	Warning	A **warning condition** has arisen that may require attention
	Error	An **error condition** has arisen that requires attention. The PowerSchool database is not available.

In the following screen capture, the icon indicates that the zone is connected to the database and the ZIS.

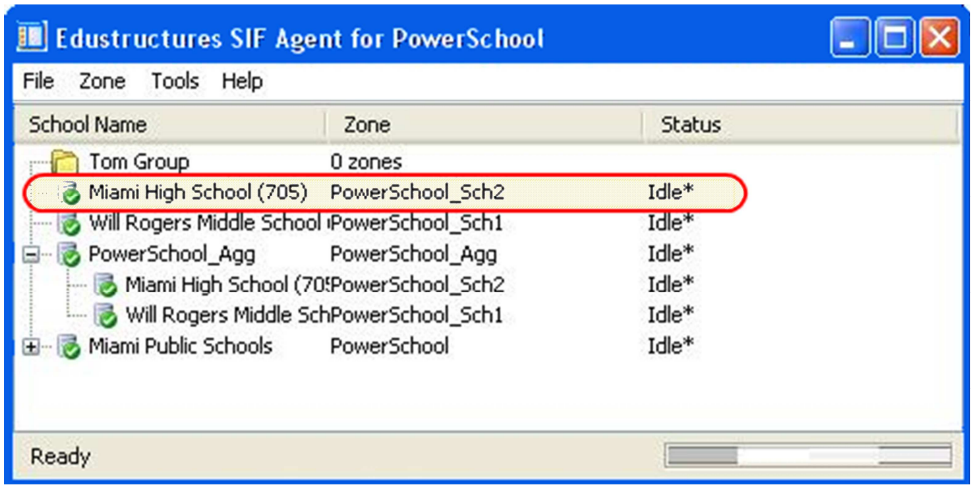


Status Column Messages

In the Status column of the main console, a message about zone connectivity is displayed.

Status Column Message	Description
Idle	The zone is connected to the Zone Integration Server (ZIS), but not processing messages at the moment.
Initializing	The zone is in the process of connecting.
Disabled	The zone has been manually disabled, or the zone has been temporarily disabled by some process, such as New Year Rollover.
Disconnected	The zone is disconnected from the Zone Integration Server.
Database unavailable	The database connection is not available.
Agent Sleeping	Indicates that the Zone > Control > Sleep command has been executed. "Sleep" mode informs the Zone Integration Server that the Agent does not wish to accept any messages for the selected zone.
*	An asterisk beside any status message indicates that the zone is running in **Pull mode.**

In the following screen capture, the condition icon and status message indicate that the highlighted zone is connected, idle, and running in Pull mode.



Viewing Detailed Zone Status Information

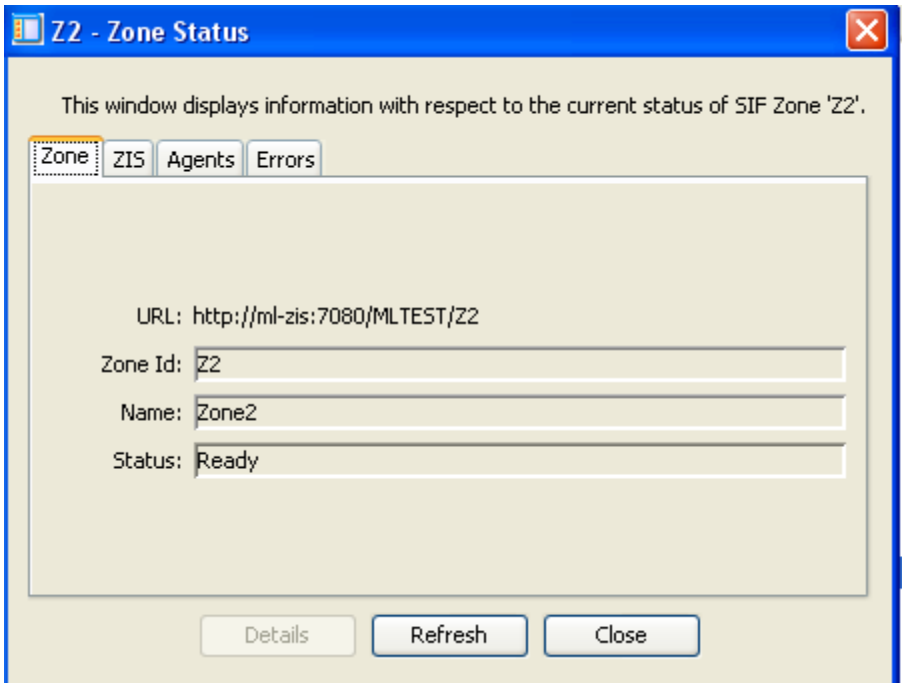
To view zone details, including connection parameters, ZIS information, participating agents, and any reported errors.

1. In the zones view of the main console, highlight the zone you wish to manage.
2. From the main menu, choose Zone > Zone Settings.
3. In the Zone tree, click on the General node.
4. Click the Zone Status button.
5. The Zone Status window displays tabs for viewing information about the Zone, ZIS, Agents (participating in the Zone), and any reported Errors (that might have taken place during communication between the Zone and the ZIS).

   The Zone Status window has a **Refresh** button; click this button to update information on any of the Zone Status tabs. Click **Close** to return to the main console. (No changes can be made to zone settings from the Zone Status window and tabs.)

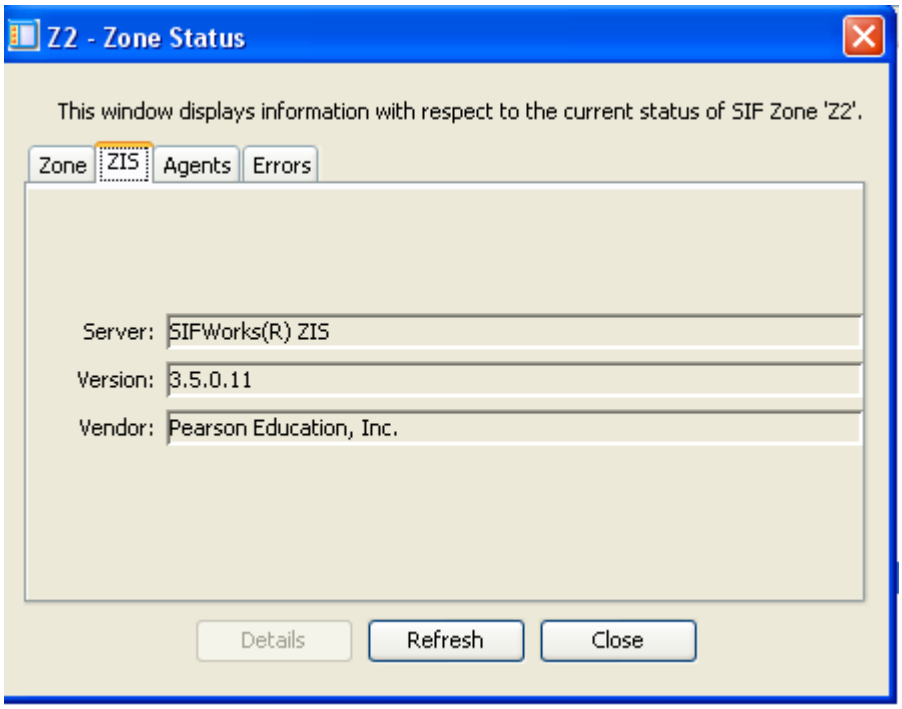
Zone Status > Zone Tab

The Zone Status window opens on the "Zone" tab, which provides details about the selected zone's URL, Zone ID, Name, and Status.



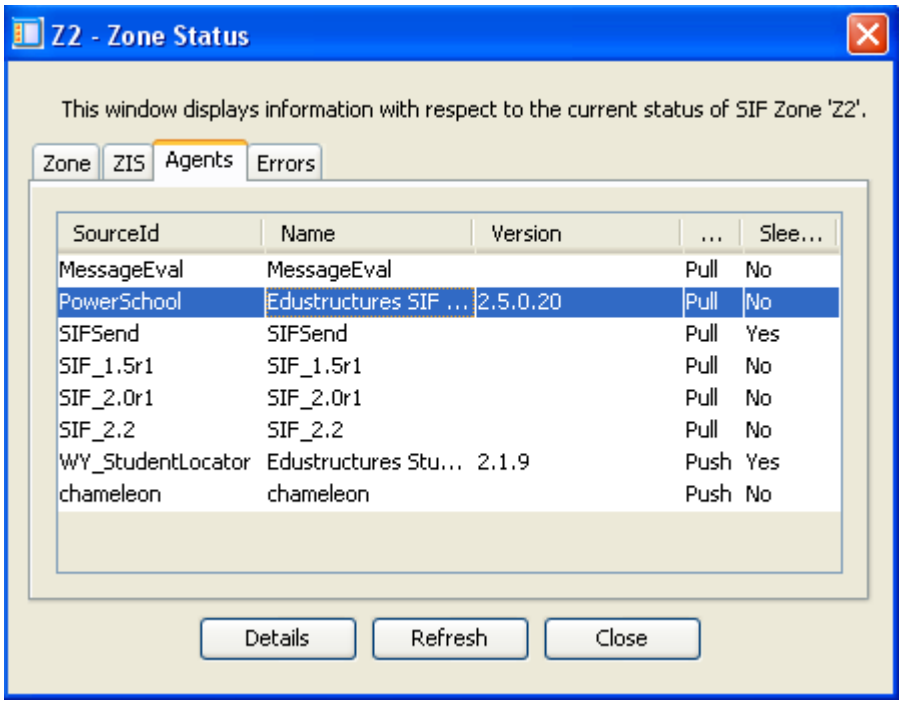
Zone Status > ZIS Tab

The ZIS tab displays Server, Version, and Vendor information for the ZIS to which the selected zone is currently connected.



Zone Status > Agents Tab

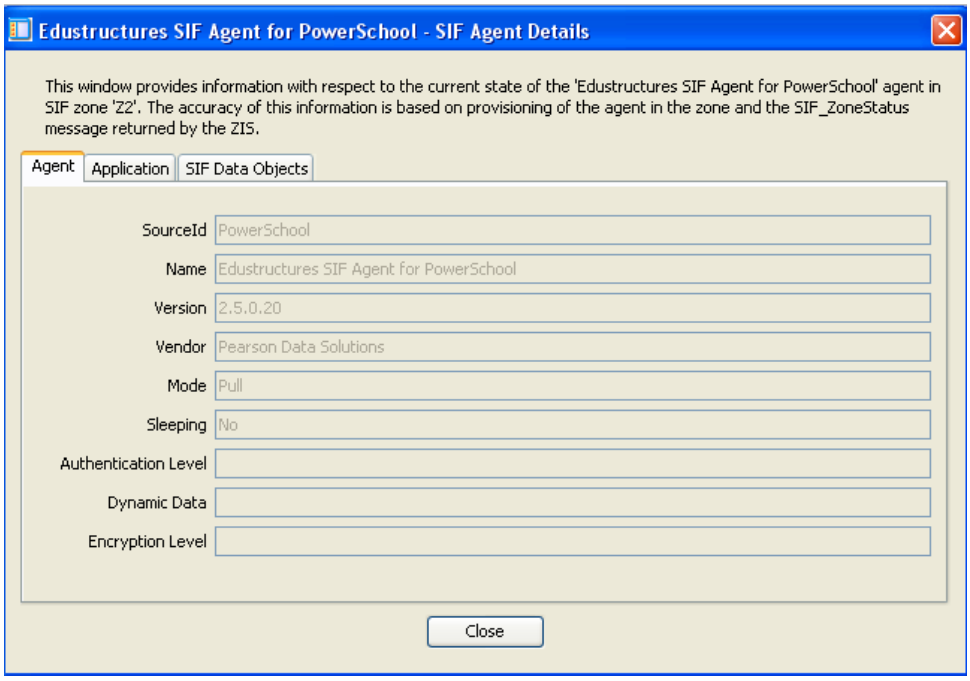
The Agents tab displays a list of all agents participating in the selected zone, along with their SourceId, Name, Version, Push/Pull mode, and Sleeping/Awake status.



Note that the **Details** button is active on the Agents tab. To view details for any agent participating in the selected zone, highlight the agent and click the Details button to open the **SIF Agent Details** screen.

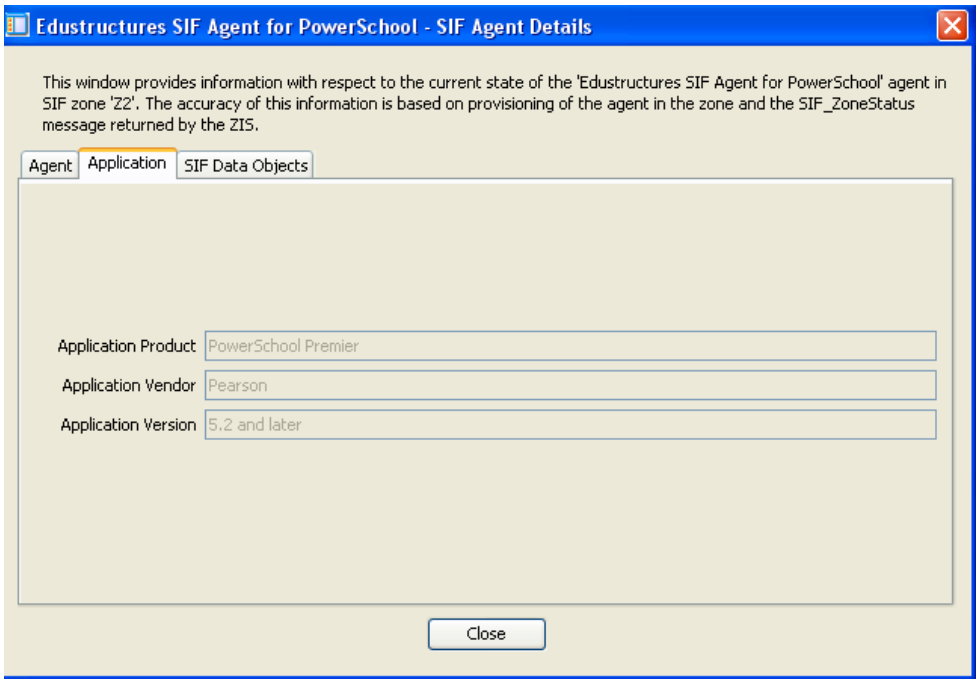
Zone Status > SIF Agent Details > Agent tab

The selected agent's SourceId, Name, Version, Vendor, Mode, Sleeping status, Authentication Level, Dynamic Data, and Encryption Level or displayed here.



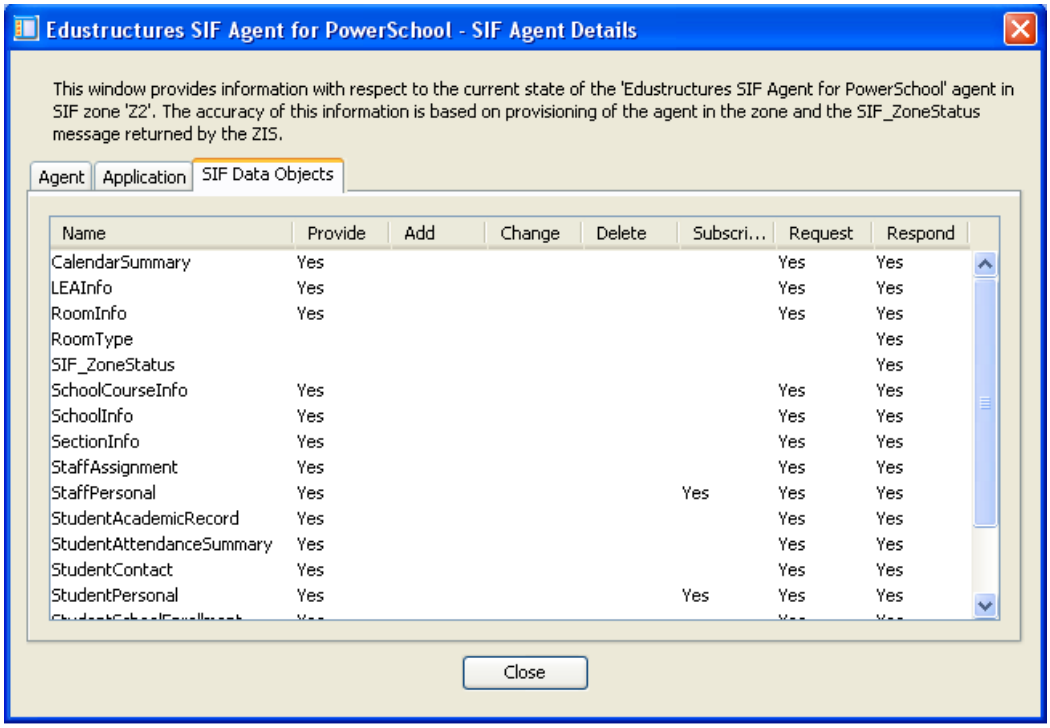
Zone Status SIF Agent Details > Application tab

This tab provides information about the application, if any, the SIF Agent supports. The Application Product (name), Application Vendor (maker), and Application Version are listed here.



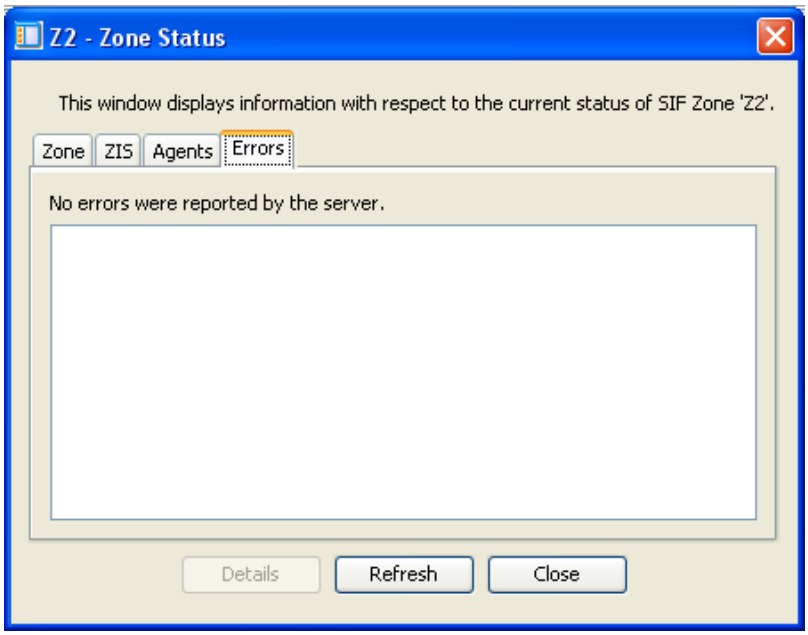
Zone Status > SIF Agent Details > SIF Data Objects tab

The SIF Data Objects tab lists all SIF Data Objects supported by the selected agent and zone. This screen displays information about the behaviors of the selected agent and zone with respect to each SIF Data Object.



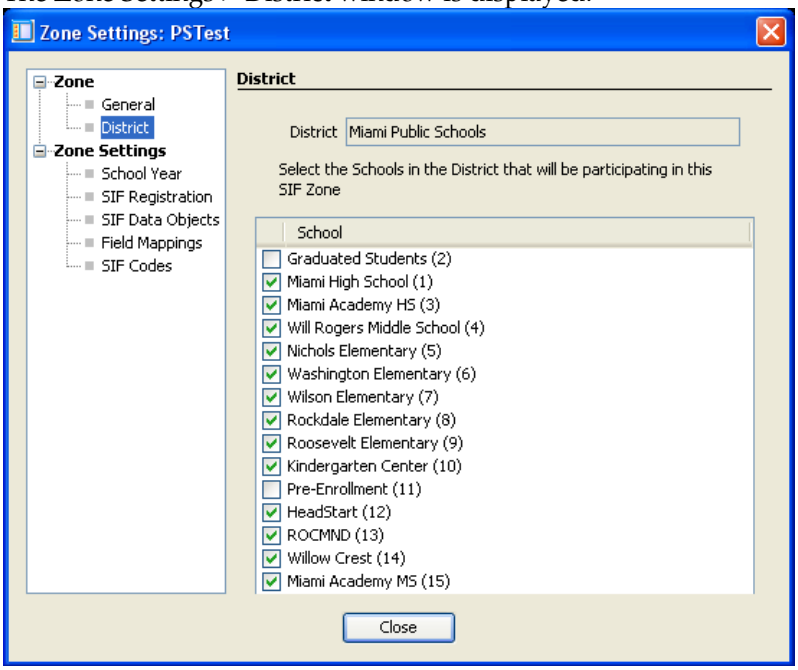
Zone Status > Errors Tab

Errors in communication between the ZIS and the selected zone are reported in the Errors tab of the Zone Status window.



Editing a District Zone

1. From the main window of the Console, highlight the Zone you wish to manage.
2. From the main menu, choose Zone > Zone Settings.
3. In the Zone tree, click on "District."
4. The Zone Settings > District window is displayed.



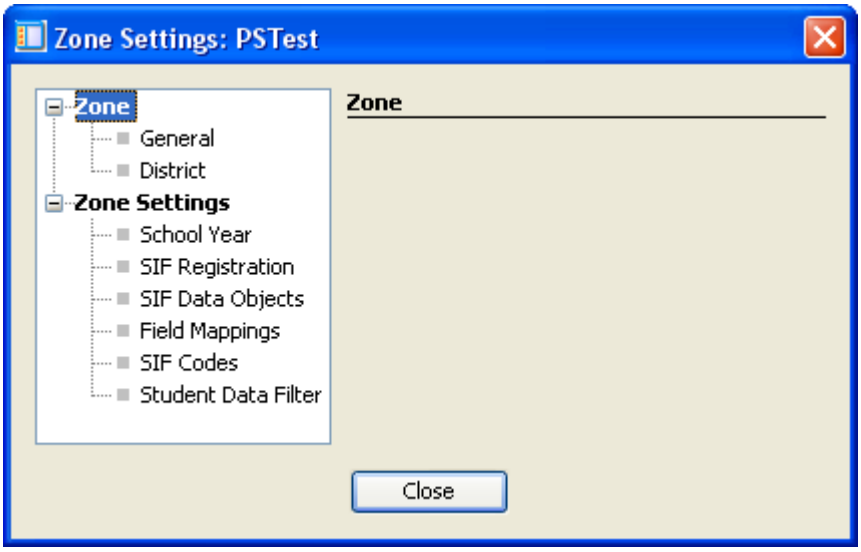
5. Select or unselect the schools you want to participate in the district zone by checking or unchecking the box(es).
6. Click "Close" to accept your changes and return to the main window of the Console.

Editing Zone Settings

1. From the main window of the Console, highlight the Zone you wish to manage.

2. From the main menu, choose Zone > Zone Settings.

3. The Zone Settings screen is displayed.



4. In the Zone tree, click on the settings you wish to view or change (School Year, SIF Registration, SIF Data Objects, Field Mappings, and SIF Codes).

5. Where applicable, uncheck the "Use Defaults" button; this will allow you to change the settings for the selected zone.

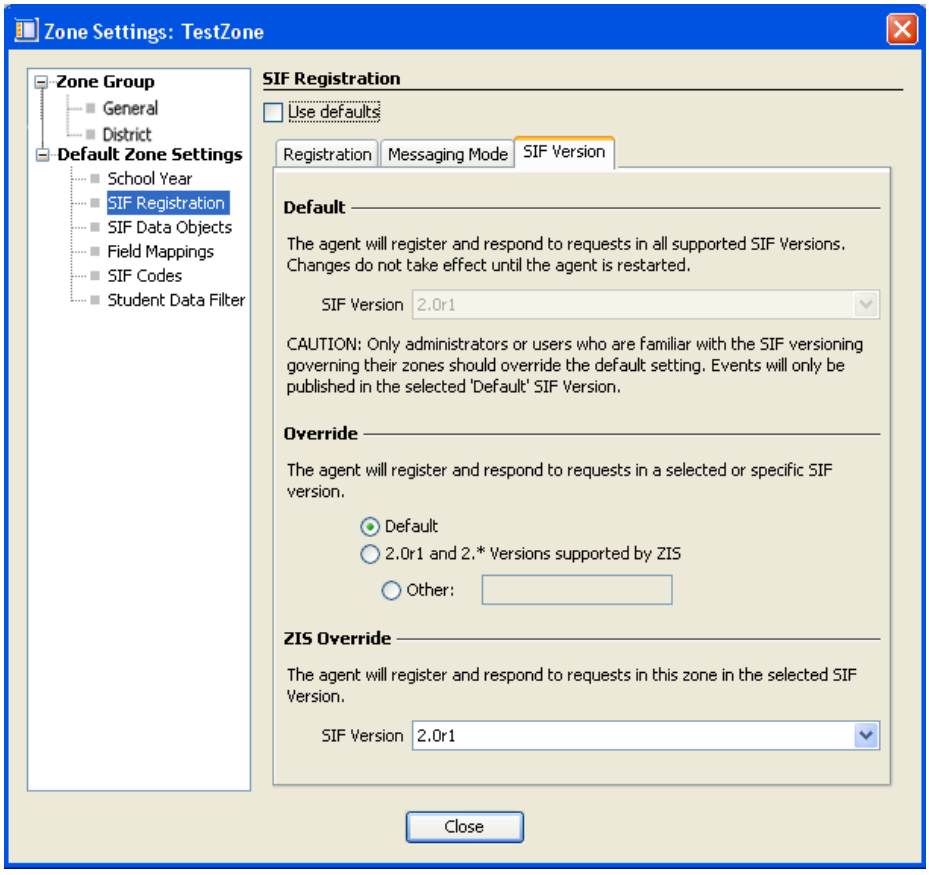
6. Enter the changes to the respective settings by entering required information, or selecting/de-selecting preferences.

7. Close the current settings window or dialog to accept your changes.

When a zone is created, it is displayed in the main window of the Console. You can change zone properties at any time by highlighting the zone in the tree, and choosing Zone > Zone Settings from the main menu.

Editing Zone SIF Registration > SIF Version

1. Start the Agent.
2. In the main window of the Console, highlight the zone you wish to manage.
3. From the main menu of the Console, select **Zone > Zone Settings**.
4. The **Zone Settings** window is displayed.
5. From the Zone Settings tree, click on **SIF Registration**.
6. The **SIF Registration** window is displayed.



7. Click on the SIF Version tab.
8. Use default SIF Version settings for the selected zone by checking the "Use defaults" box at the top of the page, or leave the box unchecked to choose other settings:

   `Default`
   The default is SIF 2.0r1. . Although the PowerSchool Agent can receive and process messages in any version of SIF—including 1.0r1, 1.0r2, 1.1, and 1.5—it will report SIF Events using only the version of the specification chosen here.

Override
The override setting allows the Agent to register itself in a selected version of SIF, responding only to requests specific to the override setting while still publishing events in the selected "Default" SIF version. This setting should be used only by administrators or users familiar with how SIF versioning governs zones.

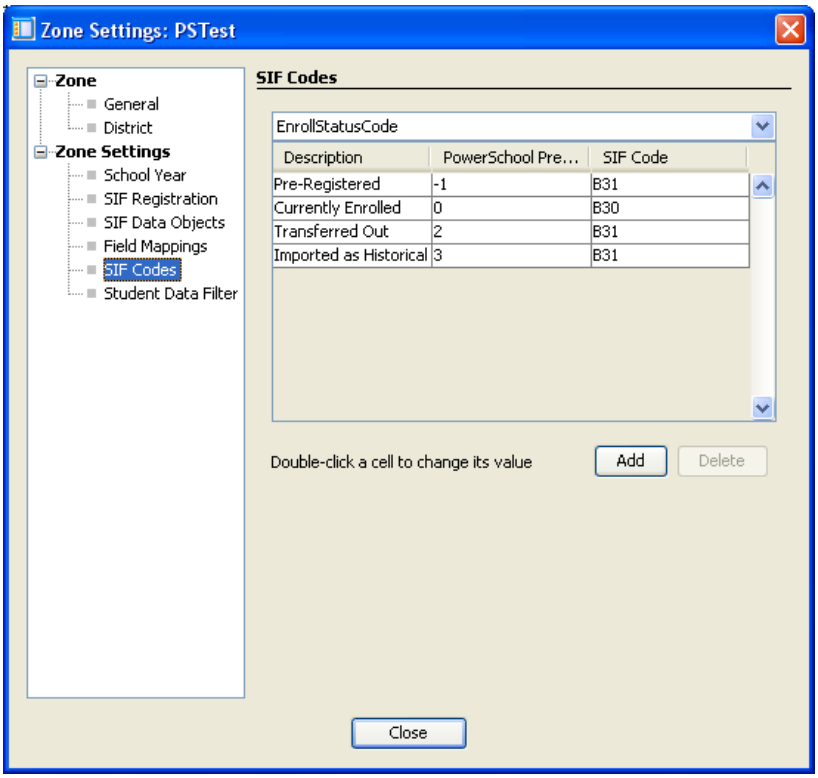
ZIS Override
The Agent will register and respond to requests in this zone in the selected SIF Version.

When to Change
Administrators must choose the version of SIF the Agent will use to report SIF Events. Select the version that is used by the majority of your subscribing Agents. SIF 2.0r1 specifications dictate that a given message can only be delivered to those Agents that support the version of SIF used to produce the message. Consequently, if a subscribing Agent does not support the version of SIF selected here, it will not receive SIF Events from PowerSchool. (Messages destined to this Agent would be discarded by the Zone Integration Server.)

Note: Only administrators or users familiar with the SIF versioning governing their zones should override the default setting. Events will only be published in the selected "Default" SIF Version.

Editing Zone SIF Codes (Translation Tables)

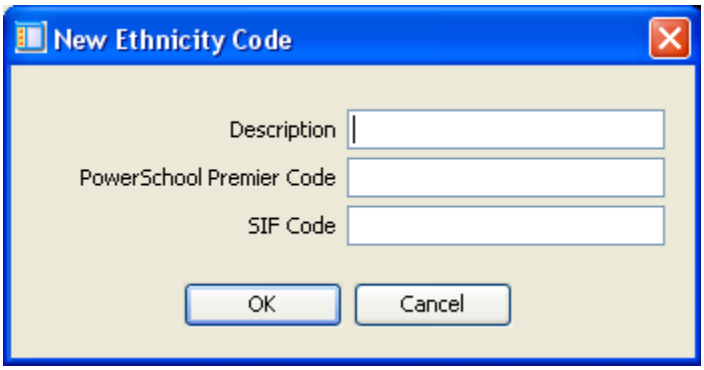
1. Start the Agent.
2. In the main window of the Console, highlight the zone you wish to manage.
3. From the main menu of the Console, select **Zone > Zone Settings**.
4. The **Zone Settings** window is displayed.
5. From the Zone Settings tree, click on **SIF Codes**.



6. From the drop-down list, select the Translation Table you wish to manage. (EnrollStatusCode, Ethnicity, Grade Level, etc.).
7. The list of SIF Codes for the selected table is displayed.
8. Double-click the target cell (Description, PowerSchool Premier Code, or SIF Code).
9. Enter new information or values into the target cell.
10. Close the SIF Codes window to accept your changes and return to the main window of the Console.

Adding a SIF Code

1. Start the Agent.
2. In the main window of the Console, highlight the Zone you wish to manage.
3. From the main menu of the Console, select **Zone > Zone Settings**.
4. From the Zone Settings tree, click on **SIF Codes**.
5. From the drop-down list, select the Translation Table to which you wish to add a SIF Code.
6. Click the **Add** button (located below the Translation Table).
7. The New Code dialog is displayed.



8. Enter the new code information. The PowerSchool Premier Code is the value being used in PowerSchool. The SIF code is the valid code from the SIF Specification.
9. Click **OK** to accept your changes.

Deleting a SIF Code

1. Start the Agent.
2. In the main window of the Console, highlight the Zone you wish to manage.
3. From the main menu of the Console, select **Zone > Zone Settings**.
4. From the Zone Settings tree, click on **SIF Codes**.
5. From the drop-down list, select the Translation Table from which you wish to delete a SIF Code.
6. Highlight the code you wish to delete.
7. Hit the **Delete** button, located below the **Translation Table**.
8. The Confirm Delete dialog is displayed.

9. Click **Yes** to delete this Code from the Selected Translation Table.
10. The selected SIF Code is deleted from the table.

Temporarily Disabling a Zone

On occasion, it may become necessary to disable all connectivity between a PowerSchool zone and the Zone Integration Server. For example, you may want to temporarily stop publishing data from a school but wish to leave the Agent running so that other schools in the district continue to participate in SIF.

To disable SIF connectivity to a zone,

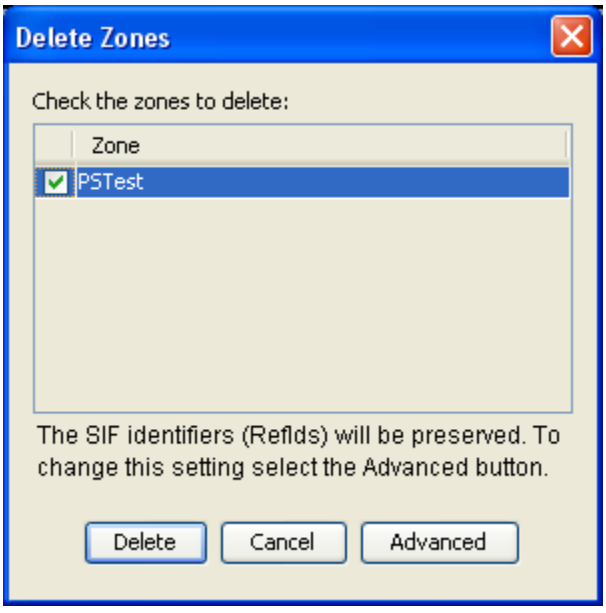
1. Select the zone in the main window of the Console.
2. Click the "Temporarily disable SIF Connectivity to this zone" checkbox.
3. Choose **Zone > Disconnect Zone**. The zone's status on the main window will be shown as "Disconnected" instead of "Idle."

Deleting Zones

IMPORTANT: Deleting a zone will delete ALL related Ref IDs.

Follow these steps to delete zones from the PowerSchool Agent:

1. Start the Agent.
2. Click on the PowerSchool icon on the system tray to open the Console.
3. Click **Connect**.
4. From the main menu of the Console, choose **File > Delete Zones**.
5. The **Delete Zones** dialog box will appear.



6. Select the zones to delete.

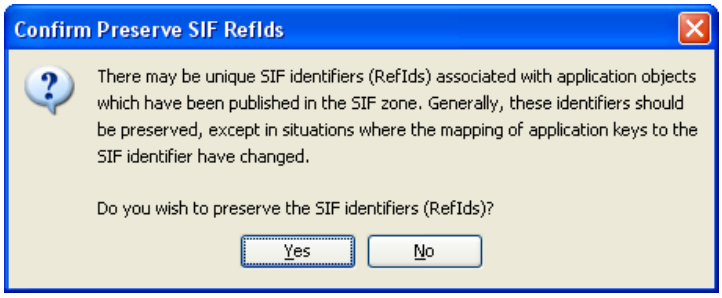
7. Delete the selected zone, by clicking the **Delete** button,

-or-

8. Preserve the RefIDs associated with the selected zone, by clicking the **Advanced** button.

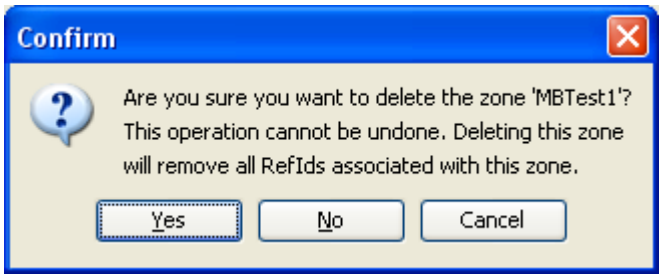
    a. To preserve the RefIds associated with the selected zone, click the **Advanced** button.

    b. A confirmation dialog is displayed.



    c. To preserve the SIF identifiers (RefIds) for the selected zone(s), click **Yes**.

    d. A confirmation dialog is displayed.



9. The selected zone is deleted from the zone tree.

Part IV

SECURTY: ADVANCED CONFIGURATION

9. Security

The Data Solutions SIF Agent for PowerSchool communicates with Zone Integration Servers using the HTTP or secure HTTPS transport protocols. HTTPS is a secure version of HTTP commonly used by e-commerce websites. It provides for both encrypted and authenticated communications so that data sent over the network is not only protected from view but also verified to be exchanged between two parties that trust one another. HTTP works the same as HTTPS but does not offer any encryption or authentication capability.

Authentication

HTTPS may be used in two modes:

- Server Authentication
- Client & Server Authentication

When Server Authentication is used, the Zone Integration Server presents its security credentials to the PowerSchool Agent for verification each time the Agent sends a message to the ZIS. If the Agent does not trust that the ZIS is who it claims to be, the connection is not established. With Server Authentication, the Agent knows that it is transmitting SIF information to the Zone Integration Server instead of to a third-party claiming to be the Zone Integration Server.

When Client Authentication is used, both sides of the communication present their security credentials for verification. Client Authentication ensures that the Zone Integration Server sends SIF messages to the PowerSchool Agent at a specified server address, so that another party cannot act as an imposter by registering its own PowerSchool Agent with the server.

With both Server Authentication and Client Authentication, the entity asking for a certificate must *trust* that certificate for the communication to proceed. This trust is established when both parties have one another's digital certificate on file.

Preparing for HTTPS

To use HTTPS, you'll need:

1. A digital certificate signed by a trusted Certificate Authority (CA). You have two choices for obtaining a certificate: establish your own Certificate Authority with software available from Microsoft, Netscape, and others; or purchase a signed certificate from a third-party CA such as VeriSign.

2. The Zone Integration Server's digital certificate. You'll import this certificate into the Agent's "truststore"—a file that keeps track of the certificates the Agent will trust when establishing connections to Zone Integration Servers.

In addition, when using Client Authentication the Zone Integration Server will need a copy of the PowerSchool Agent's certificate as well so that it can trust the Agent. Consult your ZIS documentation for instructions on setting up HTTPS at the Zone Integration Server.

Importing Certificates for HTTPS

1. Choose Agent Settings from the File menu.

2. Choose **`Transports.`**

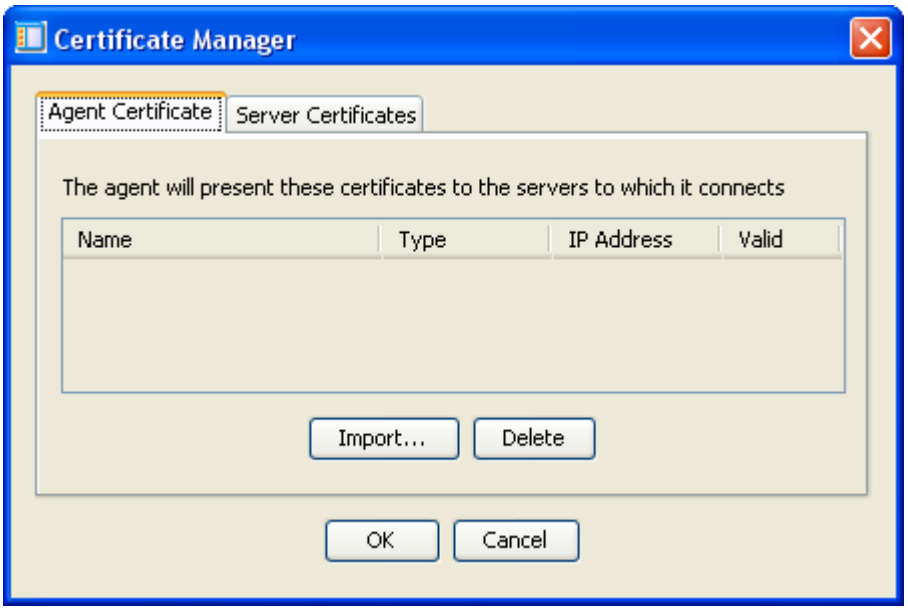
3. Choose the HTTPS protocol from the drop-down list.

4. Select the **`HTTPS`** tab.

5. Default settings for the HTTPS configuration are:

    - Port: 60033
    - Keystore: Agent.ks
    - Trustore: Trusted.ks
    - Require Client Certification: Unchecked

6. Click the **Certificate Manager** button.



This dialog box shows the Agent Certificate in the Agent.ks file. The **Server Certificates** tab lists the trusted Zone Integration Server certificates that are stored in the Agent's Trusted.ks file. You can use the **Import** and **Delete** buttons on this dialog box to manually import digital certificates.

Trusting the Zone Integration Server's Certificate

Now that you've imported an Agent certificate, the second step in setting up HTTPS is to obtain the Zone Integration Server's certificate. This can be done by clicking the **Import** button on the Server Certificates page of the Certificate Manager (shown in the previous section).

Follow these steps:

1. Using the tools provided by your Zone Integration Server product, export its digital certificate to a file. This file will be imported into the PowerSchool Agent so that the server is trusted when establishing a connection.

2. Start the Agent if not already running.

3. Click on the Data Solutions SIF Agent for PowerSchool logo on the system tray to open the Console.

4. Choose Agent Settings from the File menu.

5. Click on the **Transports** node in the tree, then select the **HTTPS** protocol from the drop-down list.

6. Click the **Certificate Manager** button.

7. Click the **Server Certificates** tab to display the Zone Integration Server certificates trusted by the PowerSchool Agent. To import your ZIS certificate, click the **Import…**

button and browse to the certificate file. Click **OK** to save your changes. The PowerSchool Agent is now configured to trust the certificate of your Zone Integration Server.

Configuring the Agent & Zones for HTTPS

Once certificates have been configured as described in the preceding section, the final step to enabling HTTPS is to change the Agent's transport protocol and zone settings.

Transport Protocol Settings

When the Agent runs in Push mode, it establishes an HTTPS port to listen for incoming traffic sent by the Zone Integration Server. The transport protocol and port settings are configured in the Global Agent Settings dialog box.

Follow these steps to set the transport protocol to HTTPS:

1. Start the Agent if not already running.
2. Click on the PowerSchool Console icon on the system tray to open the Console.
3. From the main menu of the Console, choose File > Agent Settings.
4. Click the **Transports** node in the tree.
5. Select HTTPS from the "Use this protocol" combo-box.
6. Click the **HTTPS** tab and verify that the field values are correct. Here you can specify a port number to listen for incoming traffic, change the Agent's keystore and truststore files, and enable Client Authentication. By default, the PowerSchool Agent uses port 60033 for HTTPS connectivity. If another application is using this port you can change it to another value.
7. Close the Settings dialog box and restart the Agent for the changes to take effect.

Zone URL Settings

The Zone Integration Server URL of each zone must match the protocol used by the Agent. For example, if the Agent's transport protocol is set to HTTPS as described in the preceding section, then the URL of each zone must be changed to "https://". Follow these steps for each zone the Agent is connected to:

1. Start the Agent, if not already running.
2. Click on the PowerSchool Console icon on the system tray to open the Console.
3. Select a zone in the main window of the Console.
4. From the main menu of the Console, choose **Zone > Zone Settings**.
5. In the Zone tree, click on the **General** node.

6. In the Zone Integration Server tab, verify that the URL begins with “https://” if the Agent is configured to use the HTTPS transport protocol. If you need to change the URL, click on the “Change” button and enter the changes.

7. When the Settings dialog box is closed the Agent will reconnect to each zone using the new URL.

Part V

UPDATING THE POWERSCHOOL DATABASE: SYNCHRONIZATION AND NEW YEAR ROLLOVER

10. Synchronization

The Synchronize command launches a wizard that updates the PowerSchool database records with data from SIF Data Objects published by other applications. The wizard prompts you in the steps required for importing data to selected zone(s).

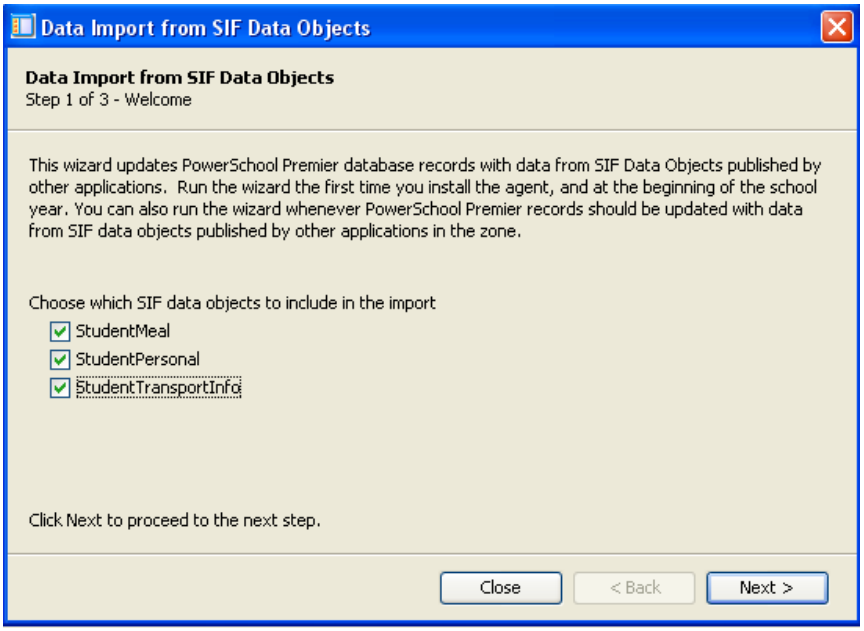
NOTE: To be included in the data import/synchronization process, SIF Data Objects (Student Meal, StudentPersonal, and/or StudentTransportInfo) must be enabled as Write Back items; for information about enabling objects for Write Back, see "Write Backs" in the Agent Settings section of this document.

To synchronize the PowerSchool database records with data from SIF Data Objects published by other applications:

1. Start the SIF Agent for PowerSchool and the console.

2. From the main menu of the console, select Tools > Synchronize.

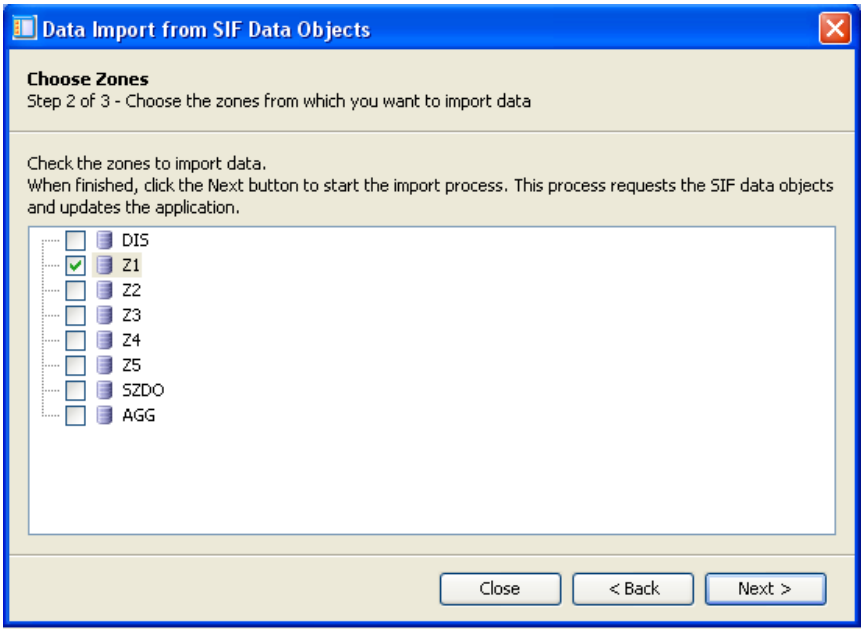
3. A **Welcome** screen (Step 1 of the synchronization) displays a description of the data import, and lists SIF Data Objects from which you can choose to import data. (Only objects previously enabled as Write Back items will be displayed on this screen.)



4. Select the SIF data objects to include in the import.

5. Click **Next.**

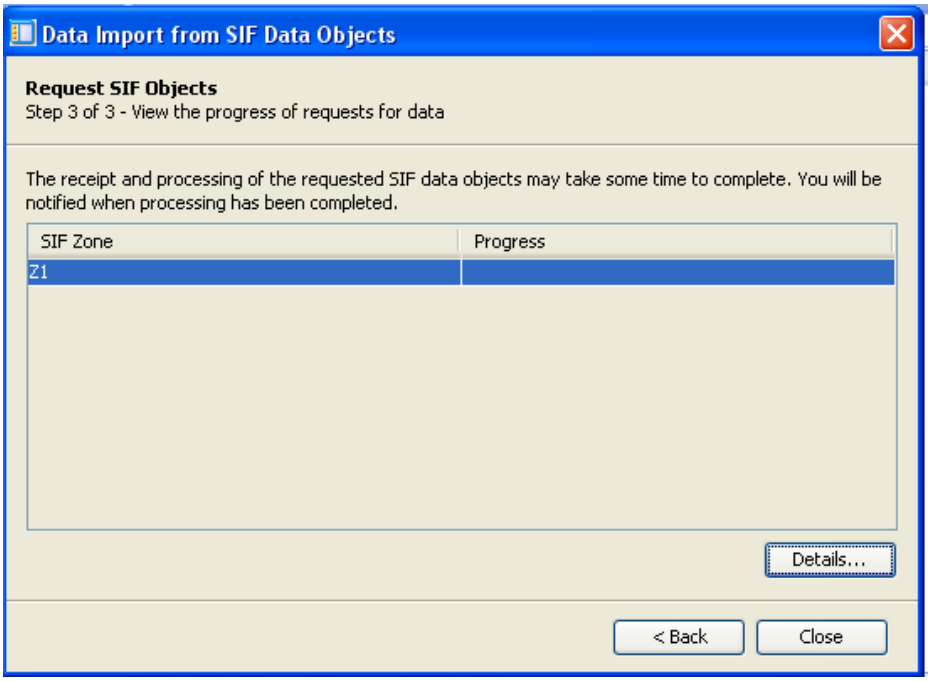
6. The **Choose Zones** screen (step 2 of the synchronization) displays a list of zones from which you can import data.



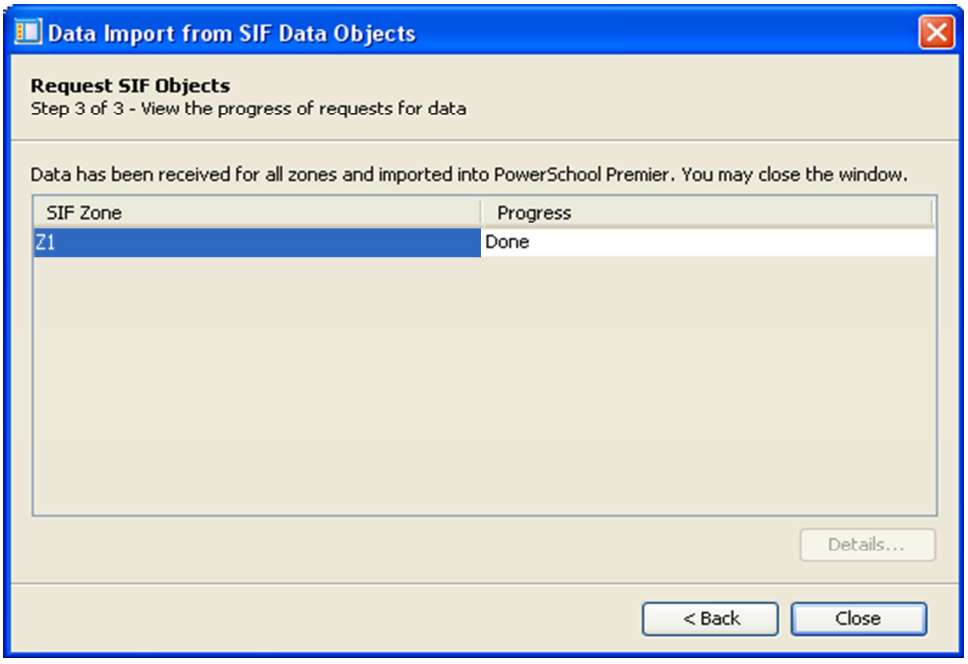
7. Select the zones from which you wish to import data.

8. Click **Next** to start the synchronization.

9. The **Request SIF Objects** screen (step 3 of the synchronization) displays the progress of the data import.



10. When the data import is complete, you will see confirmation in the Progress column of the **Request SIF Objects** screen:

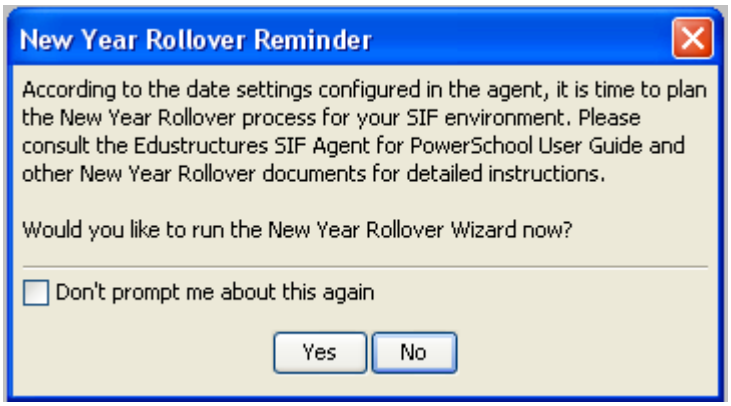


11. New Year Rollover with the Data Solutions SIF Agent for PowerSchool Premier

About New Year Rollover

New Year Rollover is the process that occurs each year between the end of the current school year and the beginning of the next school year. During this process, student grade level promotions are recorded within the Student Information System to match current grade levels within the SIF for the new school year. Students who are promoted to a different school or are transferred between schools within the district will have their records transferred appropriately within the requisite applications.

A new feature of the Data Solutions SIF Agent for PowerSchool is the New Year Rollover reminder. Depending on school year settings configured in the Agent, the New Year Rollover wizard will display this reminder at start-up:



You can choose to start the rollover process here by selecting "Yes" or defer it for a later time by clicking "No." Check the box "Don't prompt me about this again" if you don't want to receive this reminder again.

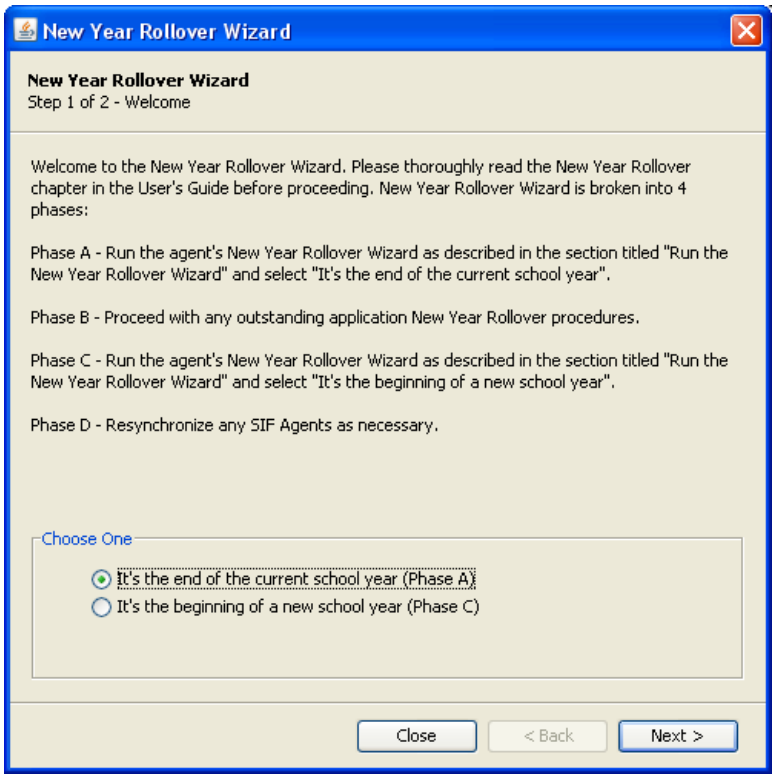
Running the New Year Rollover Wizard

A. Run the New Year Rollover Wizard (Phase A, End of Current School Year)

Phase A is the starting point for New Year Rollover. During this phase, the Agent disables connectivity for all zones, and closes down database resources and event monitoring for the current school year.

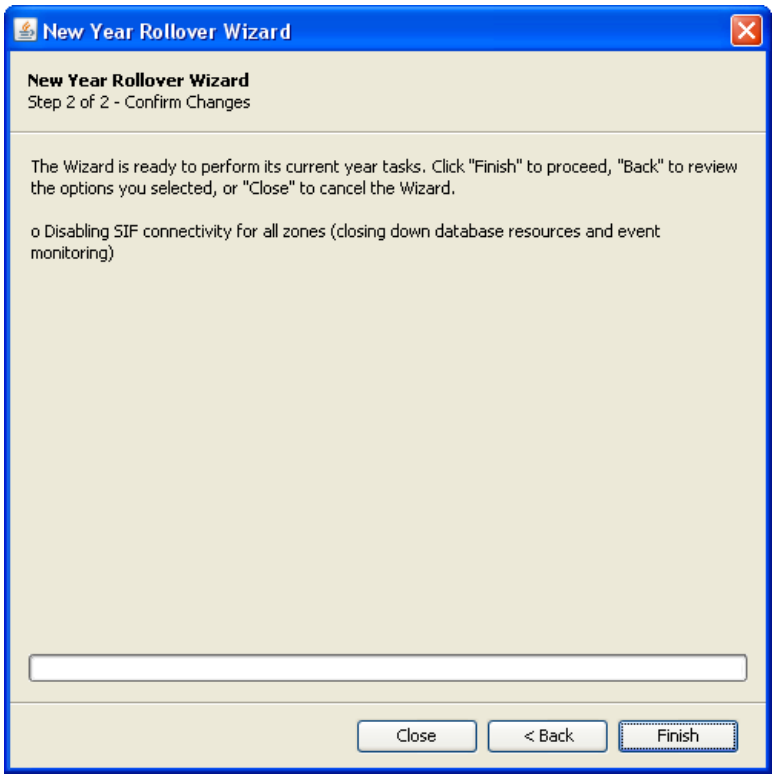
To begin New Year Rollover by running Phase A of the New Year Rollover Wizard:

1. Start the SIF Agent for PowerSchool.
2. From the main menu, click **Tools > Wizards > New Year Rollover.**
3. The Welcome screen of the **New Year Rollover Wizard** is displayed.



4. Choose "It's the end of the current school year."

5. Step 2, “Confirm Changes,” is displayed.

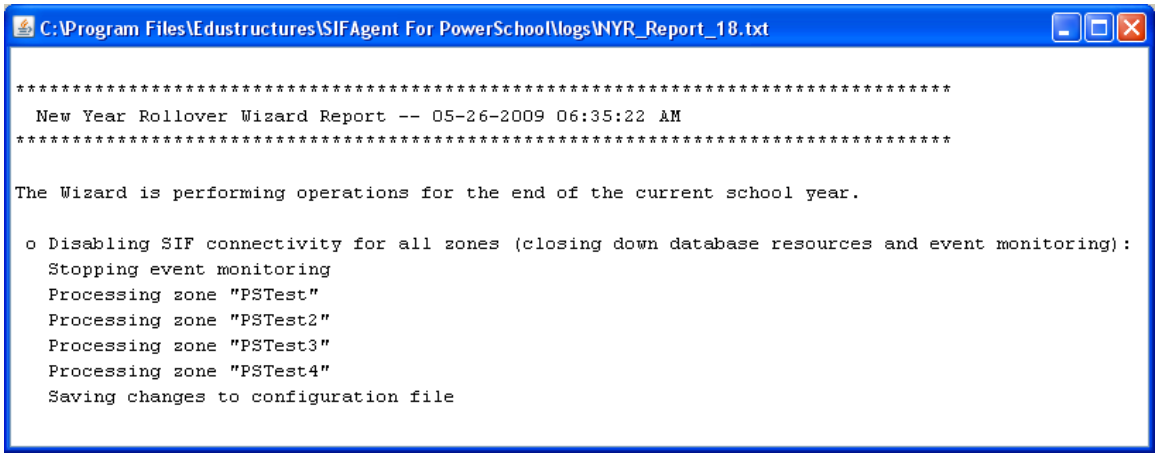


6. Click **Finish** to proceed with this phase of the Rollover.

7. A confirmation dialog is displayed.

8. Click **OK** to continue.

9. A New Year Rollover Report (for Phase A, closing out the current school year) is displayed.



10. Review the report, which details the Wizard's operations for this phase.

11. Close the report and return to the main console.

Note: The report is automatically saved to the Log folder for later use in identifying errors.

B. Perform Application New Year Rollover Procedures

Performing New Year Rollover procedures for the PowerSchool application is essential to overall success of the New Year Rollover.

For assistance with performing PowerSchool Premier New Year Rollover tasks, review PowerSchool Premier documentation or consult your system administrator.

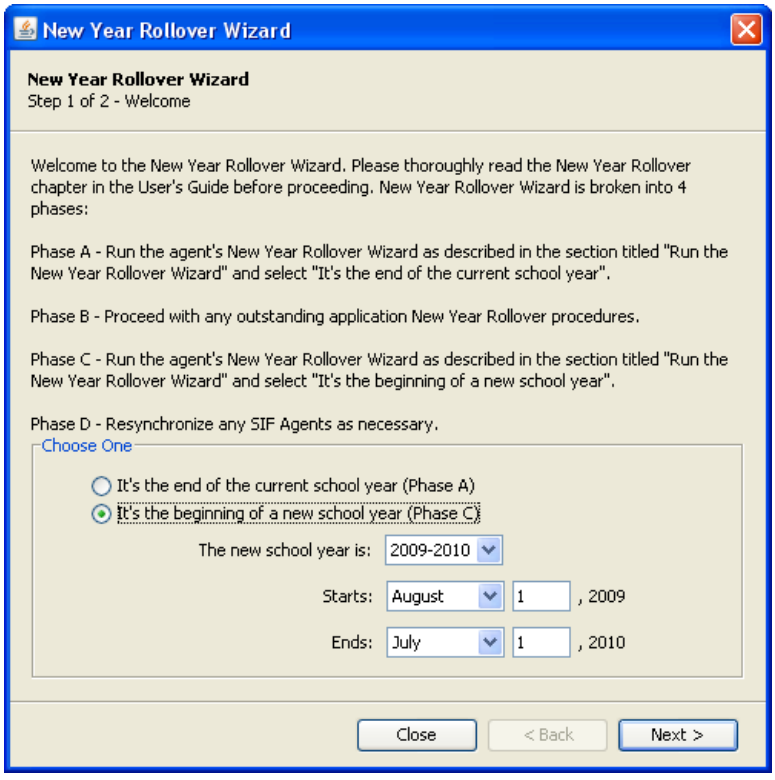
C. Run the New Year Rollover Wizard (Phase C: Beginning of New School Year)

Phase C performs these tasks to initiate settings for the new school year:

- Reconciles StudentSchoolEnrollment RefId
- Updates school year settings UI
- Unregisters SIF Connectivity for all zones
- Enables SIF Connectivity (connects to database resources and activates event monitoring)

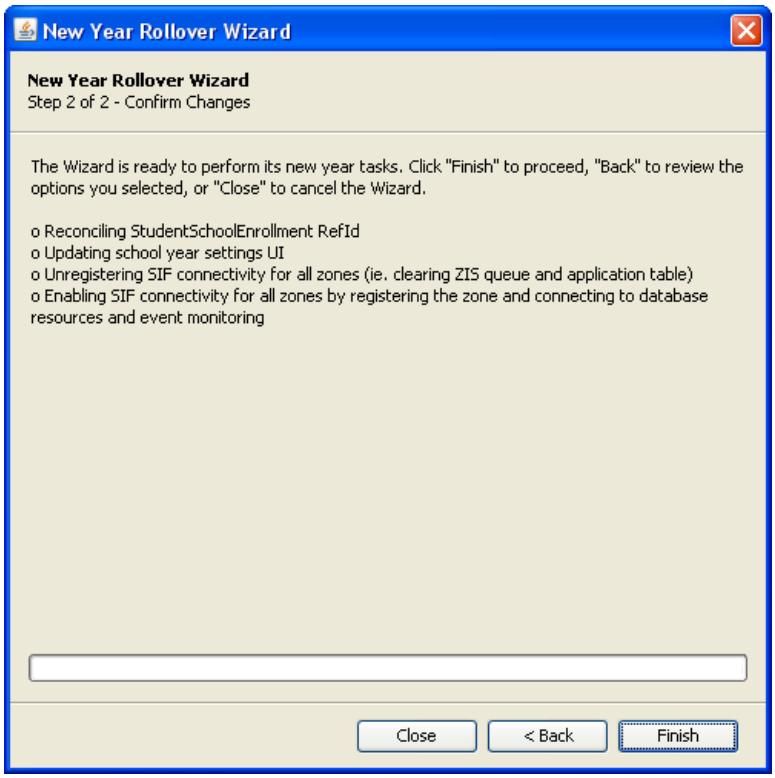
To perform Phase C of the New Year Rollover:

1. Return to the New Year Rollover Wizard by choosing **Tools > Wizards >New Year Rollover.**
2. The New Year Rollover Wizard is displayed.



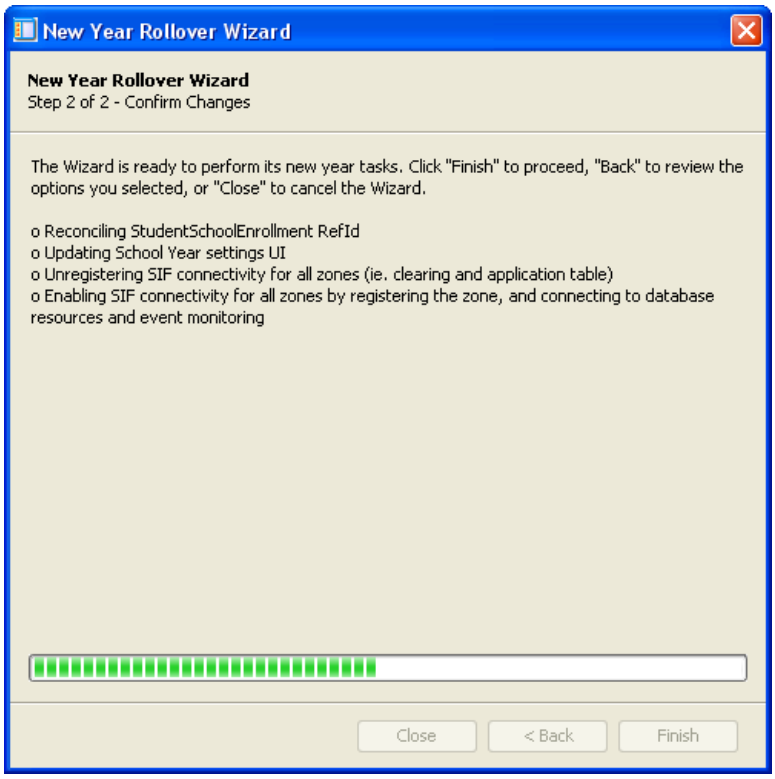
3. Choose "It's the beginning of a new school year (Phase C)."
4. Choose the new school year, and select the start and end dates for the new school year.
5. Click **Next.**

6. Step 2, “Confirm Changes,” is displayed.



7. Click **Finish** to proceed.

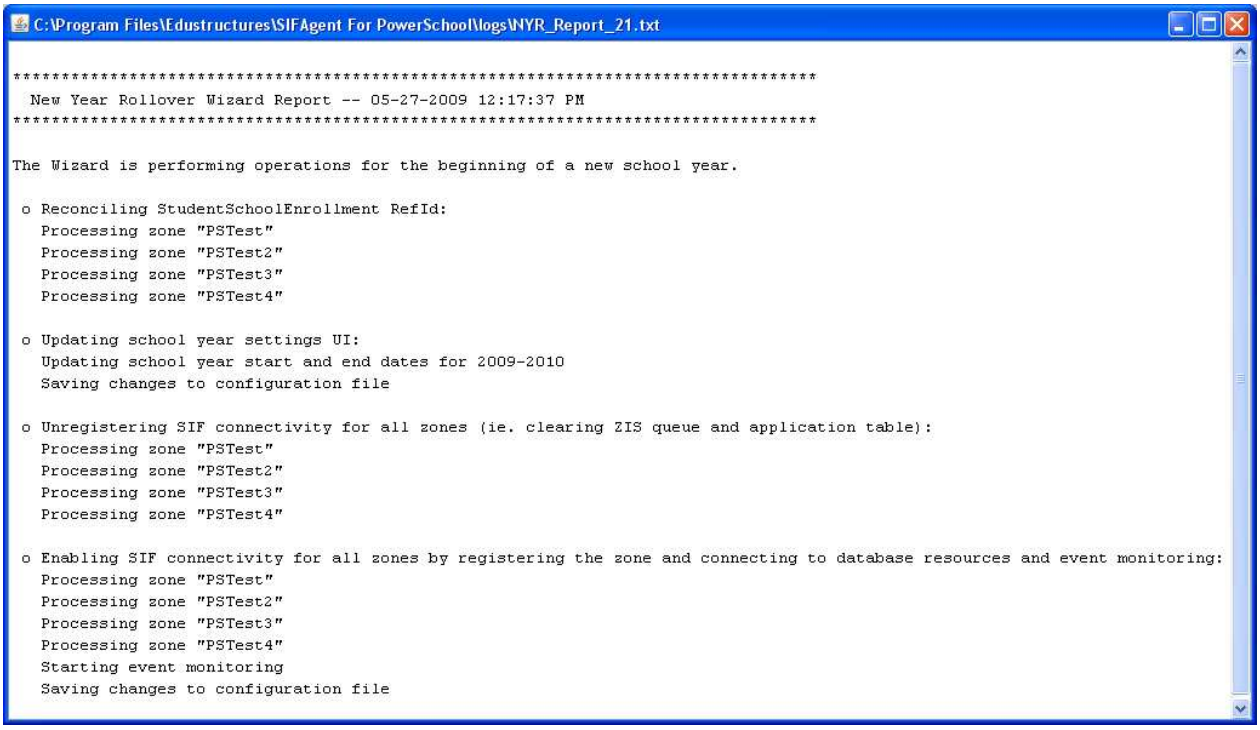
8. The Wizard displays progress of the operations in this step.



9. A confirmation dialog is displayed.

10. Click **OK** to view the New Year Rollover report (for Phase C, in preparation for the new school year).

11. The New Year Rollover report (for Phase C) is displayed.



12. Close the report and return to the main console.

Note: The report is automatically saved to the Log folder for later use in identifying errors.

D. Resynchronize Any Subscribing SIF Agents

Resynchronization incorporates all of the changes made during New Year Rollover, and allows other agents to subscribe to the new objects, thus aligning current data between the PowerSchool application and other agents. Follow the instructions provided in the vendor documentation for each subscribing agent to resynchronize with the PowerSchool Student Information System.

Part VI

GLOSSARY

12. Glossary

Agent

The SIF Agent is the "work horse" of SIFWorks. The Agent serves as a "middleman" between the pK–12 software applications (and the data associated with those applications). You might think of a SIF Agent as an interpreter helping two people—who speak different languages— carry on a conversation. As a tightly integrated component to the application, a SIF Agent communicates by sending messages (containing data objects, such as student or library circulation records) to the Zone Integration Server (or ZIS) in the universally–understood format of SIF.

Aggregate Zones

In some cases, it is necessary to group two or more schools into a single Zone. For example, a State Department or a Regional Service Agency may wish to connect to a SIF infrastructure in order to query SIF Data Objects for the purpose of vertical reporting. It would be cumbersome for this kind of application to connect to each school Zone individually, especially in a large district. What's needed is a way for the district administrator to create a single, monolithic Zone that represents all schools in the district. This way, the State Department can connect to one Zone instead of tens or hundreds of school Zones. With certain SIFWorks Agents, you can create "aggregate Zones" that serve to combine the data from two or more school Zones. Aggregate Zones function as a single point of communication for many school Zones. When a SIF Request is received, it is dispatched to all of the school Zones that are members of the Aggregate Zone; the results are combined into a single response and returned to the requesting Agent. Similarly, when events are reported by a school, those events are then reported to any Aggregate Zones of which the school is a member.

Authentication

A security configuration required when **HTTPS** is selected for the exchange of data between the application(s), the Agent, and the ZIS.

When **Server Authentication** is selected for the configuration of HTTPS, the Zone Integration Server presents its security credentials to the Agent for verification each time the Agent sends a message to the server. If the Agent does not trust that the server is who it claims to be, the connection is not established. With Server Authentication, the Agent knows that it is transmitting SIF information to the Zone Integration Server instead of to a third-party claiming to be the Zone Integration Server.

When **Client Authentication** is used, both sides of the communication present their security credentials for verification. Client Authentication ensures that the Zone Integration Server sends SIF messages to the Agent at a specified server address, so that another party cannot act as an imposter by registering its own Agent with the server.

In both **Server Authentication and Client Authentication**, the entity asking for a certificate must *trust* that certificate for the communication to proceed. This trust is established when both parties have one another's digital certificate on file.

Buffer size

This setting determines the maximum size of messages that can be received by the Agent. The factory default is usually 256Kb. (Administrators rarely change this setting.)

Certificate

Certificate(s) are the digital credentials shared between the Agent and the ZIS, and the means by which trust – or "Authentication" -- is established or recognized between the Agent and the ZIS. Certificates and their authentication are one way to secure and protect data.

Console

The SIF Agent Console is the user interface for the Agent; the Console is where configuration and administration tasks are performed.

Data Objects

Sets of information shared by software applications using the rules of the SIF Specification. In the SIFWorks environment, data objects are shared through SIF messages and written using standard XML notation.

In the SIFWorks environment, a data object is a standard definition of a piece of school system information. For example, a student's name, address and phone number are part of the "StudentPersonal" Data Object. By having different software programs understand this common definition of a student, it is possible for them to properly share this information.

Events

These are changes in the SIF environment, including new enrollment information, changes in address or phone numbers, and library patron status changes—any change or request for a change to shared data is called an "Event."

Mapping

The Agent mappings determine how the data for each supported SIF Data object flows to and from the application.

Matching

Matching is the process that occurs when the SIF Agent identifies differences between its information and information from the source database during synchronization.

Messaging

SIF Messaging settings control how the Agent sends responses to queries and how often it checks applications for changes in record data. The factory defaults are recommended for most installations, although you may wish to decrease the Event Reporting frequency to reduce network traffic and limit access to the application database files.

New Year Rollover

New Year Rollover is the process that occurs each year between the end of the current school year and the beginning of the next school year. During this process, student grade level promotions are recorded within the Student Information System to match current grade levels within the SIF for the new school year. Students who are promoted to a different school or are transferred between schools within the district will have their records transferred appropriately within the requisite applications.

Packet

This is the "bundle" of data objects the Agent includes in any given response. The requesting Agent's maximum buffer size is used to calculate the size of response packets. For example, if a requesting Agent with a maximum buffer size of 100K bytes queries the SIS for all student records, the Agent will divide the responses into chunks of 100K, perhaps resulting in a few dozen messages. This approach results in the optimal number of packets, thereby reducing network and processing overhead.

Ping

This is a Zone menu command that sends a request to the Zone Integration Server to verify that the Agent and server are connected and communicating.

Pull

This is the factory default messaging mode for SIF Agents. The Agent periodically sends commands to the ZIS to check for new messages in its queue. Pull mode makes it possible for the Agent to exchange messages with the ZIS even if the ZIS cannot "see" the Agent because of network or firewall configuration issues.

Push

"Push" mode means the server will send messages to the Agent as soon as they become available in the Agent's queue. This mode requires that the server be able to communicate with the Agent's IP address and port. (This is the default messaging mode.)

RefId

The SIF Agent Database is a small relational database that stores the identifiers—also known as *RefIds*—for all SIF Data Objects published by the Agent. A RefId is a globally unique number that associates a SIF Data Object with its corresponding records in the application database. RefIds make it possible for all applications that participate in a SIF Zone to refer to objects by a number that is not specific to any single application. The SIF Agent Database stores updates from the SSID system into a holding queue that can be queried by applications to apply updates to student records. In addition, the SIF Agent Database contains a queue that allows applications to communicate record changes that need to be published to the Zone.

Registration

In order to send and receive messages from a SIF Zone, the Schools Interoperability Framework requires each Agent to "register" with the zone. During registration, the Agent sends a series of commands to the server informing it of various operational settings such as the name of the Agent, whether Push or Pull mode will be used to retrieve messages waiting in the queue, the maximum size of messages the Agent can receive, the SIF Data Objects the Agent provides and subscribes to, and so on. Once registered, an Agent remains in this state until it sends the server a command to unregister or until manually deregistered by the ZIS administrator. The Agent performs the registration process automatically at startup. If it cannot connect to a zone because of an error or because the Zone Integration Server is off-line, it will periodically retry until a connection is established.

Request & Response

This setting configures how the Agent handles SIF requests: returning as many objects as possible in a packet, or returning only one object per packet.

SIF

(Schools Interoperability Framework) SIF is a sophisticated, Service-Oriented Architecture (SOA) technical standard for education. SIF assures interoperability between disparate software applications for improved educational business processes, data accuracy and reliability, staff efficiency and cost reduction.

SIFWorks™

The Data Solutions SIFWorks® Integration Platform—installed in more schools worldwide and built to support all versions of the SIF specification—streamlines the administration of pK–12 schools by allowing various applications to share data automatically and securely. And SIFWorks allows you to effectively manage the integration, identification and reporting needs unique to your district and state. SIFWorks, or what some of the documentation refers to as the "SIF World," is simply the means by which data flows between applications, the SIF Agent, and the ZIS.

Sleep

This command informs the Zone Integration Server that the Agent is not accepting messages. (This command is grayed out if the Agent is currently sleeping.) The Agent places each Zone in Sleep mode when the Windows Service is stopped.

Super Districts

Some instances of the PowerSchool application participate in a super districts setup that allows sub-districts to be created. Each school can be a member of a sub-districts. When super districts are enabled in the agent, the agent will read district zone information from the sub-districts table in PowerSchool.

Synchronization

Synchronization occurs when the SIF Agent updates the contents of its database to match what is stored in the source database and turns over the information to the application to place in its database as well. This allows all involved pieces of software to keep up to date about information for students in the school or district that the Zone covers. The goal of synchronization is to give the SIF Agent a high-level view of data from the Zone in order to be able to process SIF events for the Zone. It is very important the information in the Agent's database is accurate, because any inaccuracies will be duplicated in all other Agents participating in this synchronization.

Unsynchronize

Executing this command deletes all synchronized data for selected Zones, effectively returning the Zones to an unsynchronized state. No changes are made in the application.

VRF

(Vertical Reporting Framework) Because SIF is already fostering “horizontal interoperability” within the school or district, it is possible to enable “vertical interoperability” to support state and federal reporting without imposing a significant additional burden on the local schools or districts. SIF-enabled vertical interoperability reduces the amount of time and effort necessary to collect and report school data - eliminating much of the current reporting burden. The SIFWorks Vertical Reporting Framework® is the answer to state-mandated reports. The state sends out mandates, with accompanying deadlines, and each LEA (Local Educational Agency) fills the mandates and submits the reports. To accomplish this, the SIFWorks VRF™ includes two applications: the Report Collector (RC), which operates at the state level; and the Data Collector (DC), which operates at the LEA level or the ITC level. A DC operating at the ITC level is in “hosted mode”, in which the DC collects data for multiple LEAs in a region. Because SIF already fosters 'horizontal interoperability' within the school or district, it is possible to enable 'vertical interoperability' to support state and federal reporting without imposing a significant additional burden on the local schools or districts. SIF-enabled vertical interoperability will reduce the amount of time and effort necessary to collect and report school data - eliminating much of the current reporting burden.

Wakeup

This command takes a Zone out of Sleep mode. The Agent normally wakes up each Zone when the Windows Service is started.

Write Back

The Write Back feature allows other applications in the SIF zone to update the PowerSchool Premier application. The Write Back feature updates the PowerSchool application with the data from other applications by publishing SIF events or initiating a synchronization in the SIF Agent for PowerSchool.

ZIS

(**Zone Integration Server**) The ZIS is the central middleware component of the Schools Interoperability Framework that makes it possible for disparate applications to reliably and securely exchange data with one another. Unlike other Zone Integration Servers on the market, the SIFWorks ZIS is a standalone product. It runs out of the box on any OS that supports the Java 2 Runtime Environment, without the need for expensive third-party database or messaging software.

Zone

There are four elements that make up a SIF Zone. The logical grouping of software applications that allow SIF to work are:

Software Application: a software program implemented within a school or district.

SIF Data Object: Sets of information shared by software applications using the rules of the SIF Specification. The contents of Data Objects are defined by the SIF Specification. Data Objects are shared through SIF messages and written using standard XML notation.

SIF Agent: A software program, written by a vendor, that serves as the intermediary between the software application and the SIF Zone. An Agent is able to publish messages when events occur in its application, react to incoming events, and can request data and process responses from other applications. The Agent publishes and receives messages through the Zone Integration Server (ZIS).

ZIS (Zone Integration Server): A software program that serves as the central communications point in a SIF Zone. The ZIS keeps track of all the Agents registered in the Zone, and manages all transactions between and among Agents. The ZIS is what enables Agents to provide data, subscribe to events, publish events, request data and respond to requests. The ZIS is also responsible for all access control and routing within the Zone.

13. Contacting Data Solutions

Support for Your Data Solutions SIF Agent for PowerSchool

Our well-qualified support team is available to help you keep your Data Solutions PowerSchool Agent configured and running correctly. You can contact them using the following methods.

Telephone Support

Customers can reach Technical Support at 1-877-790-1261 during our regular business hours from 7:00 AM (07:00) to 6:00 PM (18:00) Mountain Standard Time. Such support will include technical assistance of product installation, technical issue resolution, and reporting of bugs and enhancement requests. If support is required outside of these hours, or additional professional services are desired, please contact Customer Services at "Option 3," or contact the Director of Implementation Services.

On-Line Customer Support Center

Customers with an active Support Agreement are eligible to access the on-line Customer Support Center at www.edustructures.com/support to view or log issues, and to access the Data Solutions knowledge base. A Customer Support representative can grant access on your request.

Remote Access

For speed and ease of access, Technical Support is accomplished primarily via telephone and/or remote access. For remote access, Data Solutions uses GoToMeeting, WebEx, and VPN technologies to visually assist and access a customer's server environment.

On-Site Support Service

Professional Implementation Services may be requested for product installation or more thorough configuration, implementation, training, or on-site needs. If on-site support or professional services are requested, please contact Customer Services at "Option 3," or contact the Director of Implementation Services.

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